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                            288 FLKNGATQGWDAPQEVPYAYQGNVWVGYDNIKSFDIKAQWLKHNKFGGAMVWAIDLDDFT 347
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325 FQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Macrozyme
APPLICANT: Macrozyme
APPLICANT: Macrozyme
APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Boot, Kolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: Which mucus is involved or infection diseases in
TITLE OF INVENTION: Which mucus is involved or infection diseases
TITLE OF INVENTION: WHICH mucus is involved or infection diseases
CURRENT APPLICATION NUMBER: US/10/004,219B
NUMBER OF SEQ ID NOS: 14
SOFWARE: Patentin Ver. 2.1
SEQ ID NO
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                                                                                                                              ---STLKKALGLOSASCTAPAQPIEPITAAPSGS 390
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                                                                                                   385 G-HCGP-KNPLLNKVHNMINGDEKNSPECILGPSTTTPTTTPTTTPTTPS 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: Description of Artificial Sequence: human AMCase OTHER INFORMATION: amino acid sequence deduced from cDNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37;
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                                                                                                                                                                                                                                                                         Sequence 1, Application US/10004219B
Publication No. US20030087414A1
GENERAL INFORMATION:
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ORGANISM: Artificial Sequence
                                                                                                                                                348 GTFCNQGKFPLI----
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Search completed: March 22, 2004, 07:45:51 Job time : 115.53 secs

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March 22, 2004, 06:42:54; Search time 44.7332 Seconds (without alignments) 640.518 Million cell updates/sec
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1 MKTIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                                   389414 seqs, 51625971 residues
                                                                             - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Perfect score:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Issued_Patents_AA:*

(cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

(cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

(cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

(cgn2_6/ptodata/2/iaa/6B_COMB.pep:*

(cgn2_6/ptodata/2/iaa/PcTUS_COMB.pep:*

(cgn2_6/ptodata/2/iaa/Backfiles1.pep:*

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

seq length: 0 seq length: 200000000

Minimum DB Maximum DB

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1 MKTIYAILSIMACIGLANASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK

MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK

CTHLMYGFAKIDEYKYTIQVFDFYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY

CTHIMYGFAKI DEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY

61 61 121 121

8 g EGSEKYSDWAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV

241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300

RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA

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Sequence 15, Appl				2,2	Sequence 4, Appli	7	7	Sequence 2, Appli	13,	10,	Sequence 12, Appl	ı,	7	Sequence 2, Appli	7	Sequence 2, Appli
US-08-877-599-15 US-09-267-574-14	US-09-267-574-15	US-09-545-814-29	US-09-459-749D-17	US-08-694-915-2	US-08-694-915-4	US-08-850-348A-2	US-09-052-778-2	US-09-408-647A-2	US-09-052-778-13	US-07-939-501A-10	US-07-939-501A-12	US-07-939-501A-1	US-08-448-398-7	US-08-358-901-2	US-08-566-347-2	US-08-693-835-2
373 4	373 4		-	385 2		423 4	442 3	700 4	440 3	423 1	423 1	389 1	389 3	561 1	561 1	561 1
23.2	23.2	21.6	20.9	20.3	20.3	20.3	13.5	13.5	13.4	13,3	13.3	13.2	13.2	13.0	13.0	13.0
721.5	721.5	672.5	650	630	630	630	420	419.5	417	412	412	411	411	403.5	403.5	403.5
8 6	30	31	32	33	34	32	36	37	38	39	40	41	42	43	44	45

KKSULT 1 US-09-292-225-15		
; Sequence 15, Application US/09292225		
; Patent No. 6455686 : General, information:		
, APPLICANT: McCall, Catherine A.		
; APPLICANT: Hunter, Shirley Wu		
; APPLICANT: Weber, Eric R.		
; TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ?	CID MOLECULES	; PROTEIL
; TITLE OF INVENTION: AND USES THEREOF		
; FILE REFERENCE: AL-2-C3		
; CURRENT APPLICATION NUMBER: US/09/292,225		
; CURRENT FILING DATE: 1999-04-15		
; EARLIER APPLICATION NUMBER: 60/098,909		
; EARLIER FILING DATE: 1998-09-02		
; EARLIER APPLICATION NUMBER: 60/085,295		
; EARLIER FILING DATE: 1998-05-13		
; EARLIER FILING DATE: 1998-04-17		
; EARLIER APPLICATION NUMBER: 09/062,013		
; EARLIER FILING DATE: 1998-04-17		
; NUMBER OF SEQ ID NOS: 49		
; SOFTWARE: Patentin Ver. 2.0		
; SEQ ID NO 15		
; LENGTH: 555		
; TYPE: PRT		
; ORGANISM: Dermatophagoides farinae		
US-09-292-225-15		
	Length 555;	
ilarity 100.0%;		
0	Indels 0;	Gaps
	UGS-09-222-225-15 UGS-09-222-225-15 Factor No. 6455666 GENERAL INFORMATION: APPLICANT: MACA211, Catherine A. APPLICANT: HUMLEY, Shirley Wu APPLICANT: HUMLEY, SHIRLEY WU APPLICANT: HUMLEY, SHIRLEY WU APPLICANT: WEBER, ETIC R. TITLE OF INVENTION: NOVEL DERNATOPHAGOIDES NUCLEIC A. EARLIER APPLICATION NUMBER: 06/098,909 EARLIER FILING DATE: 1998-04-15 EARLIER FILING DATE: 1998-04-17 EARLIER PILING DATE: 1998-04-17 EARLIER PILING DATE: 1998-04-17 EARLIER PILING DATE: 1998-04-17 EARLIER FILING	pplication US/0929225 5666 ATION: Call, Catherine A. Anter, Shirley Wu ber, Eric R. NYTON: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECT NYTON: NVOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECT NYTON: NVOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECT NYTON: NVOVER 1990-04-15 CATION NUMBER: 60/098, 909 3 DATE: 1998-09-12 CATION NUMBER: 60/098, 565 3 DATE: 1998-04-17 ID NOS: 49 entin Ver. 2.0 ILL NOS: 49 entin Ver. 2.0 ILL NOS: 800-08; Score 3107; DB 4; Length 555 Clarity 100.0%; Score 3107; DB 4; Length 555 Conservative 0; Mismatches 0; Indels

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TPSPITTEHTSETPKYTTYVDGHLIKCYRGGIPHPTNIHKYLVCEFVNGGWWVHIMPCP 540
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                                                                                                                                            361 KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP 420
                                                     241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
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                                                                                                                                                                                                                                                                                                                                                                                    SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ
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                                                                                                                                                                                                                     KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
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APPLICANT: HUNCALION:
APPLICANT: HUNCALION:
APPLICANT: HUNCALION:
APPLICANT: HUNCEN:
APPLICANT: HUNCEN:
APPLICANT: HUNCEN:
TITLE OF INVENTION: AND USES THEREOF
TITLE OF INVENTION WHERE: US/09/292,225
CURRENT FILING DATE: 1999-04-15
EARLIER PILING DATE: 1998-05-02
EARLIER APPLICATION NUMBER: 60/085,295
EARLIER APPLICATION NUMBER: 60/085,295
EARLIER APPLICATION NUMBER: 09/062,013
EARLIER APPLICATION NUMBER: 09/062,013
EARLIER PILING DATE: 1998-04-17
NUMBER: OF SEQ ID NOS: 49
COSTWARE: PatentIn Ver. 2.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence 21, Application US/09292225
Patent No. 6455686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) ORGANISM: Dermatophagoides farinae US-09-292-225-21
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Batent No. 6455686

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT PAPLICATION NUMBER: 60/098,909
EARLIER APPLICATION NUMBER: 60/098,909
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER FILING DATE: 1998-05-13
EARLIER FILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
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PLYKRPDETHITYFNVNYTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGGPPA
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; Pred. No. 6.5e-241;
0; Mismatches 0;
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; ORGANISM: Dermatophagoides farinae
US-09-292-225-18
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Best Local Similarity 100.(
Matches 555, Conservative
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Sequence 38, Application US/0929225

Patent No. 6455666

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: Mcber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: MOUSE THEREOF
FILE REFERENCE: AL-2-C3
CURRENT FILING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098,909
EARLIER PILING DATE: 1998-05-13
EARLIER RILING DATE: 1998-05-13
EARLIER RILING DATE: 1998-04-17
EARLIER RILING DATE: 1998-04-17
EARLIER RILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
SOFTWARE: PAPLICATION NUMBER: 60/085,295
EARLIER PLING DATE: 1998-04-17
SOFTWARE: PAPLICATION NUMBER: 60/085,295
EARLIER PLING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: PALENTIN VEY: 2.0
SOFTWARE: PALENTIN VEY: 2.0
SEQ ID NO 38
LENGTH: 509
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241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPA 300
                                                                 301 KGMSPPGFITGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
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Best Local Similarity 81.7%; Pred. No. 1.1e-195;
Matches 456; Conservative 24; Mismatches 26; Indels
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; ORGANISM: Dermatophagoides farinae
US-09-292-225-38
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Sequence 35, Application US/0929225

Sequence 35, Application US/0929225

Sequence 35, Application US/0929225

Benefat No. 6455666

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: HULGE, Shirley Wu
APPLICANT: HULGE, Shirley Wu
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
FILE REFERENCE: AL-2-C3
CURRENT FILING ADTE: 1999-04-15

CURRENT APPLICATION NUMBER: 06/099,909

EARLIER FILING DATE: 1998-05-03

EARLIER FILING DATE: 1998-05-13

EARLIER PELLING DATE: 1998-05-13

EARLIER APPLICATION NUMBER: 60/099,565

EARLIER FILING DATE: 1998-04-17

EARLIER APPLICATION NUMBER: 09/062,013

EARLIER PELLING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE PELENTING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SEQ ID NO 35

LENGTH: 509
                                               241 YTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 300
                                                                                                          ELCOLFOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE 379
                                                                                                                                     ELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE 360
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Best Local Similarity 81.7%; Pred. No. 1.1e-195;
Matches 456; Conservative 24; Mismatches 26; Indels 5:
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; ORGANISM: Dermatophagoides farinae
US-09-292-225-35
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COMPUTE: 94109
COMPUTE: 94109
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: Batenium Release #1.0, Version #1.25
SOFTWARE: Patenium Ralease #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/524,051
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Collins, John M.
REGISTRATION NUMBER: 26,262
REFERENCE/DOCKET NUMBER: 22875-A
TELECHMONIOLATION INFORMATION:
TELEPHONE: (816)474-9057
TELEFRY: (816)474-9057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
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INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 554 amino acids
TYPE: amino acids
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US-08-524-051-2
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Best Local Simil
Matches 208; (
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Patent No. 645566

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: Meber, Eric R.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, CURENT PLING DATE: 1999-04-15
CURRENT PLING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098, 99
EARLIER PILING DATE: 1998-04-17
EARLIER PLING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: 60/098, 565
EARLIER PILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 41
LINGTH 490
                                                                                          301 KGMSPPGFITGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                                           361 KLAFLKELGVSGVMIWSLENDDFKGHCGPKYPLLNKVHNMINGDEKNSYECLLGPSTTTP 420
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PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPA 300
                                                                KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                 KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP 420
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                                                                                                                                                                                                                                                                                                                                                           435 ---PTTTDSTSETPKYTTYIDGHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIM 491
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Best Local Similarity 82.5%
Matches 443; Conservative
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US-09-292-225-41
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363 DFKGHCGPKYPLLNKVHNMINGDEKNSYECLLGPSTTTPTPTTPSTTSTTTPT----- 415
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                                                              COLFOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 381
                                                                                                                 303 COLFOKBEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMIWSLEND 362
                                                                                                                                                                       DFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTTPTTP 441
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                                                                                                                                                                                                                                                                                                                                                                                                                CHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE 555
243 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPAKGMSPPGFITGEEGVLSYIEL
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; Sequence 2, Application US/08524051
; Patent No. 586788
; GENERAL INFORMATION:
APPLICANT: Kramer, Karl J.
APPLICANT: Choi, Hee Kyung
APPLICANT: Choi, Hee Kyung
APPLICANT: Corpus, Lolian, Bhuvana
TITLE OF INVENTION: RECOMBINANT CHITINASE AND USE THEREOF AS
TITLE OF INVENTION: A BIOCIDE
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSES: Hovey, Williams, Timmons & Collins
STREET: 2405 Grand Blvd., Suite 400
CITY: Kansas City
STATE: MO
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                    KYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL 183
                                                                              |||||| : : ||| : : ||| : 231 LYKRPHD-QWAYEKLNVNDGLHLWEEKGCPSNKLVVGIPFYGRSFTLSAGNNNYGLGTF1 289
                                                                                                                                                                                                                                               291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI 348
                                                                                                                                                                                                                                                                              290 NKEAGGGDPAPYTNATGF-----WAYXEICTEVDKDDSGWTKKWDEQGKCPYAYKGTQ 342
                                                                                                                                                                                                                                                                                                              WYGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
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                                                                                                                                                                                                                                                                                                                                                                            FECILGPSTTTPTPTTPTTPTTPT-----TTPTTPS-----PTTPTTPSPTTPTPSPTTPSP 456
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                                                                                                                         KDAF -- EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP 241
                                                                                                                                                                                                                                                                                                                                                                                                         -----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTTAKPASTTKTTVKTT 449
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                                                                                                                                                                                      LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED-----
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APPLICANT: Bryant, Peter J.
TITLE OF INVENTION: CHITINASE RELATED PROTEINS AND METHODS; TITLE OF INVENTION: OF USE; FILE REFERENCE: 07306/015001; CURRENT APPLICATION NUMBER: US/09/052,778A; CURRENT FILING DATE: 1998-03-31; NUMBER OF SEQ ID NOS: 16; SOFTWARE: FastSEQ for Windows Version 4.0; SEQ ID NO 16; LENGTH: 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27.0%; Score 838.5; DB 3; Length 5 35.4%; Pred. No. 4.8e-59; cive 79; Mismatches 210; Indels
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Best Local Similarity 35.4
Matches 208; Conservative
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; ORGANISM: Manduca sexta
US-09-052-778-16
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US-09-052-778-16
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Patent No. 6416977
GENERAL INFORMATION:
TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF
PILE REFERENCE: FC-5-C1
CURRENT APPLICATION NUMBER: US/09/545,814
CURRENT APPLICATION NUMBER: 06/128,833
PRIOR PILING DATE: 1999-04-09
                                                                  450 TITIAKPPOSVIDEENDINVRPEPKPEPOPEPEVEVP-PTENE-------VDGSEI
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Best Local Similarity 34.6%; Pred. No. 3.6e-57;
Matches 198; Conservative 94; Mismatches 205; Indels
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US-09-545-814-2
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ORGANISM: Tagged Ctenocephalides felis
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Best Local Similarity 34.64
Matches 198; Conservative
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237 YRRPHD-QYAYEKLNVNDGLQLWVDMGCPANKLVVGVPFYGRSFTLSNSNKDYRLGTYIN 295
                                                         296 KEAGGGEPGPYTNATGFISYYEICLEVDDPSKGWTKKWDEHGKVPYAYKGNQWVGYEDPK 355
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APPLICANT: Becher, Anna M.
TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE OF INVENTION: USES THEREOF FILE OF INVENTION: USES THEREOF FILE OF INVENT APPLICATION NUMBER: US/09/545,814
CURRENT FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: 60/128,833
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 40
                                                                                                       126 YSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELK
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Patent No. 6416977
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Matches 198; Conservative
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US-09-545-814-5
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SEQ ID NO 5
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------TTTEHHHHHHEEKPSEQDNQVGSQDTTATD---VDCSQEDYLPH-E 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YSDMAANPTYROOFIOSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKONYLALVRELK 184
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CURRENT APPLICATION NUMBER: US/09/545,814

CURRENT FILING DATE: 2000-04-07

PRIOR APPLICATION NUMBER: 60/128,833

PRIOR FILING DATE: 1999-04-09

NUMBER OF SEQ ID NOS: 2.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 YSFIGVDDKDWSVLVIDPELDIDDN----GFKNFTNLRKIHPNVKLQIAVGGWAEGGKK
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                                                                           7 ILSIMACIGIAMVASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLM
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                                                                                                                                                                                                                                                                                                  518 NIHKYLVCEFVNGGWWVH----IMPCPPGTIW 545
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-----KYTTYVDGHLIKCYKEGDIPHPT 517

TPTPAPTTSTPSPTTTE----HTSETP-

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339 CPANKLVVGVPFYGRSFTLSNSNKDYRLGTYINKEAGGGEPGPYTNATGFISYYEICLEV 298
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : | | : | : | : | : | 359 QGVCSDDKHTLAVIMHDYM----KNYIVPEFDSSRIITPRPEWAKPPSTPSQEP-DDIPYI 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---TTTEHHHHHEEKKPSEODNOVGSODTTATD---VDCSOEDYLPH-E 512
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                                                                                                                                                                                       APPLICANT: Becher, Anna M.

TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE REFERENCE: FC-5-C1 CURRENT APPLICATION NUMBER: US/09/545,814

CURRENT APPLICATION NUMBER: 60/128,833

PRIOR PELING DATE: 1999-04-09

NUMBER OF SEQ ID NOS: 40

SOFTWARE: Patentin Ver. 2.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4; Length 559;
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; Pred. No. 7.1e-57;
86; Mismatches 193;
                                     518 NIHKYLVCEFVNGGWWVH----IMPCPPGTIW 545
                                                                   DCNKYYRC-----VHGEAVLFTCREGTVY 536
                                                                                                                                            Sequence 14, Application US/09545814
Patent No. 6416977
GENERAL INFORMATION:
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35.8%;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93 -EKRGYERFUNLRIKNPELTTMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFLOEYK 151
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                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release #1.0, Version #1.30
SOPTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23.8%; Score 738; DB 2; L
34.2%; Pred. No. 4.3e-51;
tive 85; Mismatches 150;
                                                                                                                                                                                                                            CITY: Jericho
STATE: New York
COUNTRY: United States of America
ZIP: 11758
                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NOWBER: US/08/486,839
FILING DATE: 07 - June - 1995
ATTORNEY/AGENT INFORMATION:
Sequence 4, Application US/08486839
Patent No. 5928928
GENERAL INFORMATION:
                                                                                                                                                                                      E: Hoffmann & Baron
350 Jericho Turnpike
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Baron, Ronald J. REGISTRATION NUMBER: 29, 281
REFERENCE/DOCKET NUMBER: 29, 281
TELECOMMUNICATION INFORMATION: TELEPHONE: (516) 822-3550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (516) 822-3582
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
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                                                           APPLICANT:
TITLE OF INVENTION: A hu
TITLE OF INVENTION: prof
TITLE OF INVENTION: in the NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
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152 FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
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93 -EKRGYERFUNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYK 151
                                                             325 FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
                                                                                                                                                                                   ---RYPLIQTLROELSDPYLPSGT 394
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18: Marshall, O'Toole, Gerstein, Murray & Borun
233 South Wacker Drive/6300 Sears Tower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/09039198A
Patent No. 6200551
GENERAL INFORMATION
APPLICANT: Tjoelker, Larry W.
TITLE OF INVERTION: CHITINASE CHITIN-BINDING FRAGMENTS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & ESTREET: 233 South Wacker Drive/6300 Sears Tower CITY: Chicago STATE: 111inois COUNTRY: United States of America ZIP: 60606-6402 COMPUTER READBLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/039,198A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23.8%; Score 738; DB 3; L 34.2%; Pred. No. 4.3e-51; live 85; Mismatches 150;
                                                                                                                                                                                                                             445 PSPTTPTTPSPTTPSPTTPT 469
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Rin-Laures, Li-Hsien
REGISTRATION NUMBER: 33,547
REFERENCE/DOCKET NUMBER: 27
TELECOMMUNICATION: INFORMATION:
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CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
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Best Local Similarity
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        GHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTPTTPTTPTTPTTPTTPTTPTTPTTT 444
                                              --RYPLIQTLRQELSLPYLPSGT 394
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Production, Its Use For Decomposing Chitin,
Therapy or Prophylaxis Against Infection Di
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/151,011
FILING DATE: 10 - September - 1998
FILING DATE: 10 - September - 1998
ATTORNEY AGENT INFORMATION:
NAME: MOFISS, Robert C.
REGISTRATION NUMBER: 42,910
REFERENCE/DOCKET NUMBER: 294-32 DIV
TELECHONE: (516) 822-3550
TELEPHONE: (516) 822-3582
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 466 amino acids
                                                                                      445 PSPITPITIPSPITPTTPSPITPT 469
                                                                                                                              PELEVP-KPGQPSEPEHGPSPGQDT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    United States of America
                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Hoffmann & Baron, LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                         6900 Jericho Turnpike
                                                                                                                                                                                                                               Sequence 4, Application US/09151011
Patent No. 6057142
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Best Local Similarity 34.2<sup>3</sup>
Matches 152; Conservative
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TITLE OF INVENTION: P
TITLE OF INVENTION: T
NUMBER OF SEQUENCES:
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STREET: 69
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ZIP: 11791
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Search completed: March 22, 2004, 07:03:58 Job time : 45.7332 secs

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66 YGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELTTMISLGGWYEGSEK 125
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123 FSAMAASGELRKRFISDCVAFCQRHGFDGIDLDWEYPAQRDGNPLIDRDNHAQLVEEMRE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 186 AFEPHGYLLTAAVSPGKDKIDRAYDIXELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR 245
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chitinase (BC 3.2.1.14) [imported] - African malaria mosquito
C;Species: Anopheles gambiae (African malaria mosquito)
C;Species: Anopheles gambiae (African malaria mosquito)
C;Accession: T44445
R;Shen, Z.; Jacobs-Lorena, M.
R;Shen, Z.; Jacobs-Lorena, M.
R;Shen, Z.; Jacobs-Lorena, M.
R;Reference number: Z22771
A;Reference number: Z22771
A;Reference number: Z22771
A;Reference number: Z22771
A;Reference number: Z22771
C;Cossion: T44445
A;Residues: 1-525 <SHE>
A;Residues: 1-525 <SHE>
A;Resperimental source: adult; gut
C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                     32.5%; Score 1008.5; DB 2; Length 38.4%; Pred. No. 2.2e-55; tive 93; Mismatches 187; Indels
                                                                                                                                                                                              ALIGNMENTS
          724898
730418
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G72865
JC4565
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C;Keywords: glycosidase; hydrolase
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Matches 211; Conservative
243
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
 T44445
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                                                                       March 22, 2004, 06:40:28 ; Search time 36.0951 Seconds
                                                                                                                                     1 MKTIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE
           GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
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                                                                                                                                                                                            283366 segs, 96191526 residues
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Maximum Match 100%
Listing first 45 summaries
                                                   - protein search, using sw model
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Maximum DB seq length: 200000000
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Match Length DB
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1: pirl:*
2: pir2:*
3: pir3:*
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                                                   OM protein
                                                                                                                                        Sequence:
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                                                                        Run on:
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chitin

gut

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A53918 chitinase (EC 3.2.1.14) precursor - braconid wasp (Chelonus sp.)
C;Species: Chelonus sp.
C;Date: 28-Jul-1995 #sequence_revision 28-Jul-1995 #text_change 21-Jul-2000
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Insect Mol. Biol. 7, 233-239, 1997

A.Title Chitlinases are a multi-gene family in Aedes, Anopheles, and Drosophila A.Title Chitlinases are a multi-gene family in Aedes, Anopheles, and Drosophila A. Reference number: 217872

A.Accession: T14075

A.Molecule type: DNA

A.Residues: 1-1635 «DEL»

A.Cross-references: EMBL.AF026492; NID:g2564720; PID:g2564721; PIDN:AAB81850.1

C.Genetics:

A.Gene: CHT.

A.Introns: 462/3; 524/3; 618/1; 951/3; 1151/2

C.Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
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TTTEHTSETPKYTTYVDGHLIKCY--KEGDIPHPTNIHKYLVC-----EFVNGGWWVH 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                             chitinase (EC 3.2.1.14) - yellow fever mosquito
C;Species: Aedes aegypti (yellow fever mosquito)
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999
C;Accession: T14075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DRLVIK-----PHDSWADIDNRFYERVVEYKKKGKKVT--VAIGGWNDSAGDKYSRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             937 AGESTRARGFLSYYEICANIRNKKWIYVARDRKGRMGPYAYKGDOWVSFDDOYMIRHKSEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                880 PDDFDKT---FNANFTIHYWIEKGADPRKLVMGMPMYGOSFSLADNKEHGLNAKTYGGGE
                                                                    21 IKRDHNDYSKNPM-----RIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            650 INKETSNODENAIESDVDYKVVCYFTNWAWYRQGNGKYLPEDIDADLCTHIVYGFAVLDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YKYTIQVFDPYQDDNHNSW----EKRGYERFNNLRLKNPELTTMISLGGWYEGS-EKYSDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             130 AANPTYRQOFIQSVLDFLOEYKFDGLDLDWEYPGSRLGNPK----IDKONYLALVRELKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186 AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           306 PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LKELGVSGVMVWSLENDDPKGHCG-PKNPLLNKVHNMINGDEKNSFECIL--GPSTTTPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1057 PTRPPTS-----TTPPETTRRPSTTTSTRRTTMTTTT--TTTRRPTTTTRRRTSAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PSPTTTEHTSETPKY-----TTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1635;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 28.0%; Score 869; DB 2; Length 16: Best Local Similarity 34.3%; Pred. No. 4.8e-46; Matches 196; Conservative 95; Mismatches 196; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----CQEKLT 551
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                                                                                                                536 IMPCPPGTIW 545
                                                                                                                                    ||||||:
---CPPGTLF 507
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epidermal and
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C;Species: Manduca sexta (tobacco hornworm)
C;Species: Manduca sexta (tobacco hornworm)
C;Date: 11-Aug-1995 #sequence_revision 11-Aug-1995 #text_change 29-Jan-1999
C;Accession: A56596
R;Kramer, K.J.; Corpuz, L.; Choi, H.K.; Muthukrishnan, S.
Insect Biochham. Mol. Biol. 23, 591-701, 1993
A;Fille: Sequence of a CDNA and expression of the gene encoding epidermal an A;Fille: Aguence of a CDNA and expression of the gene encoding epidermal an A;Reference number: A56596; MUID:93357793; PMID:8353525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFOKEE--WHIQYDEYYNAPYGYNDKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               290 NKEAGGGDPAPYTNATGF-----WAYYEICTEVDXDDSGWTKKWDEQGKCPYAYKGTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                349 WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     343 WYGYEDPREVEIKNAWIKQKGYLGAMTWAIDMDDFGGLCGEKNPLIKILHKHMS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      409 FECILGPSTTTPTTPTTPTTPT-----TTPTTPS-----PTTPTTTPSPTTPSP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        125 KYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKONYLALVREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 AILSIMACIGIMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBIP:136418)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:U02270; GB:S64757; NID:g406048; PID:g406049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242 LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Note: sequence extracted from NCBI backbone (NCBIN:136417, NC; Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 27.0%; Score 838.5; DB 2; Best Local Similarity 35.4%; Pred. No. 9.2e-45; Matches 208; Conservative 79; Mismatches 210;
A; Experimental source: larvae
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-554 <KRA>
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124 110 183 170 241 230 348

408

456 449 497

540

-CNSDQDYIPDKKHCDKYWRC--VNGE--AMQFSCQHGTVFNVELNVC

20;

us-09-662-293-18.rpr

C;Accession: A53918 R;Krishnan, A.; Nair, P.N.; Jones, D. J. Biol. Chem. 269, 20971-20976, 1994 A;Title: Isolation, cloning, and characterization of new chitinase stored in active form A;Accession: A53918 A;Accession: A53918 A;Accession: A53918 A;Accession: A53918 A;Molecule type: mRNA A;Molecule type: mRNA A;Residues: 1-483 - KRI> A;Cross-references: GB:U10422; NID:g533504; PIDN:AA461639.1; PID:g533505 C;Keywords: glycosidase; hydrolase; polysaccharide degradation	57 CYFTNWAQYRQGRAKFVPEDYTPGLCTHILFAFGWMNA-DYTVRAXDP-ADLPNDWAGE 96 G-YERFNNLRLKONPELTTMISLGGWYEGSEKYSDWAANPTYRQQFIQSVLDFLQEYKFDG 114 GWYRRVNKLKVTDTQLKTLLSFGGWSFGTALFQGMAASSASKYFTDSAITFVRTWGFDG 155 LDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDR 115 LDLDWEYPSGATDWANYVALVKELKAAGESEAGSTGKDRLLUTAAVAAGPATIDA
Query Match 25.8%; Score 802; DB 2; Length 483; Best Local Similarity 36.1%; Pred. No. 1.4e-42; Matches 160; Conservative 89; Mismatches 162; Indels 32; Gaps 9;	208 AYDIKELNKLFDWANYMYDYHGWENFYGHNAPLYKRPDETDELHTYFNVNYTWHYYLN
QY 4 IYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCT 62 ::: ::: :	Z6B NGATKDKLVMGVPFYGKAMSIEDRSKLKLGUPAKGMSPPGFISGEEGVLSYIELCGLFVG.
Cy 63 HLMYGPAKIDBYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELLTMISLGGWYEG 122	CY 328 EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKEIGVSGVAVWSEENDDFKGHC 387 :
QY 123 SEKYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRE 182	388 GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTPTTTPTTP
Qy 183 LKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELMKLFDWMNVMTYDYHGGWENFYG-HNAP 241	430 TIPTIPSPITPITPSPIT
Qy 242 LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAK 301 227 SASSHDSGNELKLNVKAAVKYWLQNGVPKEKLVVGVPAYGKSFTLSNPSNKGLGAPVS 284	Qy 450PTTTPSPTTPTPTPTPTPTPTPTPTPTPTPTPTPT
	Qy 504 LIKCYKBGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 552
OY 362 LAPLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTT 418 145 AQFIKQEGLGGAMVWSIETDDFKGLCGEKYPVLKALNSVLGRGGSSSPAETKRK 398	RESULT 6 S57197 oviduct-specific glycoprotein 95K precursor - bovine (fragment)
OY 419 TPIPITIPITESPITE 441 DD 399 NNVPDDQPAPPRSPAEDSAPRAP 421	C;Species: Bos primigenius taurus (cattle) C;Date: 29-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 05-Nov-1999 C;Accession: S51197 R;Sendai, Y.; Abe, H.; Kikuchi, M.; Satoh, T.; Hoshi, H.
RESULT 5 T15408 hypothetical protein C04F6.3 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999	of bovine oviduct-specific glycop MID:8199272
C;Accession: Tib408 R;Nhan, M. submitted to the EMBL Data Library, December 1995 A;Description: The sequence of C. elegans cosmid C04F6. A;Recresion: Tif408	A;Cross-references: EMBL:D16639; NID:g391621; PIDN:BAA04065.1; PID:d1004583; PID:g39162 C;Keywords: glycoprotein C:Keywords: glycoprotein 22.1%; Score 685.5; DB 2; Length 537; De Best Local Similarity 33.3%; Pred. No. 38-35; March 27.10.
A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: DNA A;Residues: 1-617 <nha> A;Cesidues: 1-617 <nha> A;Cessereferences: EMBL:U42835; NID:g1125760; PID:g1125762; PIDN:AAA83586.1; CESP:C04F6</nha></nha>	10 IMACIGLANASIKADHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYG 67 :: : : : :
L;Genecics: A;Gene: CESP:CO4F6.3 A;Introns: 28/1; 66/2; 504/1	PAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS
Ouery Match 22.7%; Score 705.5; DB 2; Length 617; Best Local Similarity 30.2%; Pred. No. 2e-36; Matches 178; Conservative 90; Mismatches 210; Indels 111; Gaps 19; Qy 37 CYVGTWSVYHK-VDPYTIEDIDPFRCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKR 95	128 DMAANPTYROOFIGSVLDFLOEYK : : : : : : 106 TMLSTFSNRERFVSSVIALLRTHG

Oy 419 TPTPTTTPTTPTTPTTPTTPSPTTPTTTPSPTTPSPT 466 Db 390 TPSPKFWFSTAVNSSRIGPEMPTTTPTTGGEAVATETHRKSATMTTTPRGE 449 OY 467 TPTPT-TPTPAPTTSTPSPTTTEHTS 491 Db 450 TATPTRTPLSSGRRTAAPEGKTESFGEKPLTS 481 RESULT 8 138605 Oviductal glycoprotein - human C:Species: Homo sapiens (man) C:Species: Homo sapiens (man) C:Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 29-May-1998 C;Accession: 138605 R;Arias, E.B.; Verhage, H.G.; Jaffe, R.C. B;Alas, E.B.; Verhage, H.G.; Jaffe, R.C. B;Alas, E.B.; Verhage, H.G.; Jaffe, R.C. B;Altle: Complementary deoxyribonucleic acid cloning and molecular characterization of a A;Reference number: 138605; MUID:95119256; PMID:7819450 A;Recession: 138605 A;Accus: preliminary; translated from GB/EMBL/DDBJ A;Residues: preliminary; translated from GB/EMBL/DDBJ A;Residues:	ore 668; ore 668; ded. No. 4. Mismatcher IPMRIVCYVGT	MGUPFY MGIPTYN	Db 450 TVTPTKETVSLGKHTVALGEKTEITGAMTMTSVGHQSMTPGEKALTPV-GH 499 RESULT 9 A49562 cartilage glycoprotein gp39 precursor - human N,Alternate names: 39K synovial protein C;Species: Homo sapiens (man) C;Date: 23-Mar-1995 #sequence_revision 23-Mar-1995 #text_change 22-Jun-1999
Qy 188 EPHGYLLIAAVSPGKDKIDRAYDIKELNKLFDWMAVATYDYHGGWENFYGHNA 240 165 KNEAQLTMRPRLLLSAAVSGDPHVVQKAYEARLIGRLLDFISVLSYDLHGSWEKVTGHNS 224 Qy 241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300 1	ndent oviduct protein precurso 1.8 orientalis aries, Ovis ammo 19-1996 #sequence_revision 16-A 1146470 1.36, 2485-2496, 1995 1910ment. Under: 146470; MUID: 95269691; 1146470 11minary; translated from GB/E 199: mRNA -539 < DES> ences: EMBL:U16719; NID:988560	Indels 64	Db 228 PLPSLPGDPKSSAYAMSYMRQLGVPPEKKILMGLPTYGRTFHLLRASGNELGAGA 281 Qy 301 KGMSPPGFISGEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360 Db 282 AGASPGKYTKQAGFLEYDEYCFV(PAKKRWINDQYVPYAFKGEWVGYDDLASISC 339) Qy 361 KLAFLKELGVSGVMVWSLENDDFKGH-CGP-KNPLLNKVHMMINGDEKNSFECILGPSTT 418 Db 340 KAFFIKREHFGGAMVWTLDLDDFRGNPCGTGPFPLAHTLNNLLVNDEFSS 389

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244 VLRLGAPANKLVMGIPFFGRSFTLAS-SKTDVGAPASGPGIFGRFTKEKGILAYYELCDF 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAPLKELGVSGVMVWSLENDDFK 384
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A;Status: nucleic acid sequence not shown
A;Nolecule type: mRNA
A;Residues: 1.405 <mRNA
A;Residues: 1.405 <mRNA
A;Residues: 1.405 <mRNA
A;Cross-references: EMBL:X93035; NID:g1085065; PIDN:CAA63603.1; PID:g1085066
R;Morrison, B.W.
A;Reference number: S61550
A;Reference number: S61550
A;Accession: S61550
A;Accession: S61550
A;Residues: 1-245, 11, 247-330, 'H', 332-350, 'MWWALDLDDFQGTCQPKEFFPLTNAIKDALA' <A;Residues: 1-245, 11, 247-330, 'H', 332-350, 'MVWALDLDDFQGTCQPKEFFPLTNAIKDALA' <A;Residues: EMBL:X93005; NID:g1085065; PIDN:CAA63603.1; PID:g1085066
A;Note: the differences at the carboxyl end are due to a frameshift error
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23 KLVCYFTSWSQYREGVGSFLPDAIQPPLCTHIIYSFANIS-----SDNWLSTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 20-Jun-2000
                                                                                                                                                                                                  W-EKRGYERFUNLRLKNPELTIMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEY
                                                                                                                                                                                                                                WNDVILYDTLATLKORNPNLKTLLSVGGWNFGSQRFSKIASNTQSRRTFIKSVPFFLRTH
                                                                                                                                                                                                                                                                                                         KFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185 IDRGYDIAQISQHLDFISLLTYDFHGAWRQTTGHHSPLFRGQGDASS-DRFSNADYAVSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    265 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL
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                                                                                           RIVCYVGTWSVYHKVDPYTIED-IDPPKCTHLMYGFAKIDEYKY-TIQVFDPYQDDNHNS
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C;Superfamily: Streptomyces chitinase chi40
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-405/Product: breast-regressing protein brp39 #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20.8%; Score 646.5; DB 2; Length 405; 34.4%; Pred. No. 5.5e-33; ive 73; Mismatches 129; Indels 65
                                                                                                                            share
                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  breast-regressing protein brp39 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 19-Mar-1997 #sequence_revision 25-Apr-1997 #text_
C;Accession: 861551; 861550; 148271
R;Morrison, B.W.; Leder, P.
Oncogene 9, 3417-3426, 1994
A;Teile: neu and ras initiate murine mammary tumors that.
A;Reference number: 148271; MUID:95060797; PMID:7970700
                Pred. No. 3.1e-33; ; Mismatches 130;
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GNFCGONLRFPLTSAIKDVL 380
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36.6%; "****
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     C;Accession: A49562; S10677; A33162

R;Hakala, B.E.; White, C.; Recklies, A.D.
U. Biol. Chem. 268, 25803-25810, 1993

A;Title: Human cartilage gp-39, a major secretory product of articular chondrocytes and A;Reference number: A49562; MUID:94064658; PMID:8245017

A;Accession: A49562

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-38 x-BAX.
A;Accession: S10677; MUID:90328983; PMID:2375755

A;Accession: S10677

A;Accession: S10677

A;Residues: 22-40, XY,42-45 xNY2.
C;Superfamily: Streptomyces chitinase chi40
C;Superfamily: Streptomyces chi40
C;Superf
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21.3%; Score 662; DB 2; Length 38
Best Local Similarity 34.9%; Pred. No. 5.5e-34;
Matches 144; Conservative 81; Mismatches 136; Indels
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R, Shackelton, L.M.; Mann, D.M.; Millis, A.J.T.
submitted to the EMBL Data Library, January 1995
A, Description: Identification of a 38kDa heparin-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  heparin-binding glycoprotein 38K - pig
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997
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A;Accession: S51327
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A;Molecule type: mRNA
A;Residues: 1-383 <SHA>
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Length 383;

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В

Score 650;

20.9%;

Match

Query

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Query Match
Best Local Similarity 30.1%
Matches 156; Conservative
                                                                                                                                                                                                      A; Residues: 1-504 < FUH>
                                                                                                                                                   A, Accession: A38221
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            204 KIDRAYDIKELNKLIPDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTWH 263
                                                                                                    243
                                                                                                                                    264 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 323
                                                                                                                                                       244 YMTRLGAQASKILMGIPTFGKSFTLAS-SENQLGAPISGEGLPGRFTKEAGTLAYYEICD 302
                                                                                                                                                                                                    324 LFQKEEWHIQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKELGVSGV----MVWSLE 379
                                                                                                                                                                                                                                     303 FLKGABVHRLSNE--KVPFATKGNQWVGYEDKESVKNKVGFLKEKKLAGAWCGHWIWMI- 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---YLLTAAVSPGK 202
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                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Accession: S27879
R;Chang, N.C.A.; Liu, C.H.; Chang, A.C.
Submitted to the EMBL Data Library, June 1992
A;Description: Molecular characterization of a secretory protein (YM-1) transposering tion: Molecular characterization of a secretory protein (YM-1) transposering type: mEMA
A;Reference number: S27879
A;Rocession: S27879
A;Residues: 1-399 <CHA
A;Residues: 1-399 <CHA
A;Cross-references: EMBL:M94584; NID:g202441; FIDN:AAB62394.1; FID:g202442
C;Superfamily: Streptomyces chitinase chido
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185 AIDTGYDIAQIAQHLDFINLMTYDFHGVWRQITGHHSPLFQGGGXDT-RFDRYSNVNYAVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SODLRDYEALNGLKDKONTELKTLLAIGGWKFGPAPFSAWVSTPQNRQIFIQSVIRFLRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 EVCTFINEGATEVW----DAPQEVPYAYQGNEWYGYDNVRSFKLKAQWLKDNNLGGAVVW
YKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF----EP--HGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34 RIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKI--DEYKYTIQVFDPYQDDNHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23 QLMCYYTSWAKDRPIEGSFKPGNİDPCLCTHLIYAFAGMQNNEITYT-----H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91 SWEKRGYERFINILR-LKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DKIDRAYD-IKELN--KLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLCQLFQK----EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40;
                                                                                                                                                                                                                                                                                         NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTP 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
19.6%; Score 608; DB 2; Length 399
Best Local Similarity 36.3%; Pred. No. 1.3e-30;
Matches 141; Conservative 67; Mismatches 140; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLDMDDFSGSFCHQRHFPLTSTLKGDLN 389
                                                                                                                                                                                                                                                                                                                                                                                            mouse
                                                                                                                                                                                                                                                                                                                                                                                        secretory protein YM-1 precursor - mo
C,Species: Mus musculus (house mouse)
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RESULT

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A;Status: preliminary
Modecule type: DNA
A;Residuss: 1-599 <STO>
A;Cross-references: GB:AP001510; GB:BA000004; NID:g10173440; PIDN:BAB04635.1; GSPDB:GN00
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                                                                                                                                                                                    brugian
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C;Species: Bacillus halodurans
C;Species: Bacillus halodurans
C;Dacesolon: D83764
R;Takami, H; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Nucleic Acids Res. 28, 4317-4331, 2000
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans A;Réference number: A83650; MUID:20512582; PMID:11058132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   507
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                    chitinase
                              C;Species: Brugia malayi
C;Accession: A38221
R;Fuhrman, J.A.; Lane, W.S.; Smith, R.F.; Piessens, W.F.; Perler, F.B.
Proc. Natl. Acad. Sci. U.S.A. 89, 1848-1552, 1992
A;Ttle: Transmission-blocking antibodies recognize microfilarial chitinase
A;Reference number: A38221; MUID:92179220; PMID:1542646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             143 FDLDWEYPVGVAEEHAKLVEAMKTAFVEEAKTSGKQR-LLLITAAVSAGKGTIDGSYNVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GMYSAVTKLRETNPGLKVILSYGGYNFGSAIFTGIAKSAQKTERFIKSAIAFLRKNNFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LDLDWEYP-GSRLGNPKIDKONYLALVRELKDAPEPHGYLLTAAVSPGKDKIDRAYDIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LNKLFDWMNWTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HOBGOGA-YMVKGDOWYGYDNEETIRIKMKWLKEKGYGGAFIWALDFDDFTGKSCGKGPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37 CYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQ-DDNHNSWEK
                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M73689; NID:g156063; PIDN:AAA27854.1; PID:g156064
A;Note: sequence extracted from NCBI backbone (NCBIP:85345)
C;Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69;
                                                                                                                                                                                                                                                                      compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19.5%; Score 604.5; DB 2; 30.1%; Pred. No. 3e-30; iive 86; Mismatches 208;
(EC 3.2.1.14) MF1 - nematode (Brugia malayi)
Brugia malayi
                                                                                                                                                                                                                                                                            A,Status: preliminary, not compared wit
A,Molecule type: nucleic acid, protein
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23;

Gaps

156;

Indels

67; Mismatches 185;

102

71

117

162

221 227 280 283

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GWYEGSEKYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYP--GSRLGNPK--1DK 173
                                                                                                                              KIVGYYPSWAAYGR--NYNVADIDPTKVTHINYAFADICWNGIHGNPDPSGPNPVTWTCQ
                                                                                                       DEYKYTIQV------FDPYQDDNH----NSWEK----RGYERFNNLRLKGVPELTTMISLG
                                                                                                                                                                                                             GW-TWSNRFSDVAATAATREVFANSAVDFLRKYNFDGVDLDWEYPVSGGLDGNSKRPEDK
                                                                                                                                                                                                                                               QNYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYD
                                                                                                                                                                                                                                                                                                                  YHGGWENFYGHNAPLYKRPDET ---- DELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYG
                                     34 RIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKI
   Conservative
     170;
                                                                     45
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C;Species: Bacillus circulans
C;Species: Bacillus circulans
C;Accession: A3836
B;Watanabe, T.; Suzuki, K.; Cyanagi, W.; Ohnishi, K.; Tanaka, H.
C;Accession: Chem. 265, 155915665, 1990
A;Pitle: Gene cloning of chitimase A1 from Bacillus circulans WL-12 revealed its evoluti
A;Reference number: A38368; MUD:90368776; PMID:2203782
A;Accession: A38368
A;Accession: A38368
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-699 <WATA
A;Residues: 1-699 <WATA
C;Superfamily: fibronectin type III repeat homology
C;Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                       29;
                                                                                                                                                                                                                                :|: | | | | sHINYAFANICWDGRHGNPDPAGPNPQTWSCQDENGVIDVPNGSIVMGDPWIDAQKSNPG 126
                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                        246 ASGASPGYVENNK---LINEIAELVDWINIMTYDFNGGWQNISGHNAPLYYDPATANTELP 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303 TPEHFNVESAVEGHLQAGVPEHKLVLGMPFYGRGWSNCDGA--NQGEYQR-CAPPREGTW 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NSWEK--RG-YERFNNLRLKNPELTTMISLGGWYEGSEXYSDMAANPTYRQQFIQSVLDF 146
                                                                                                                                                                                                                                                                                                                                                  147 LOBYKFDGLDLDWEYP--GSRLGNPK--IDKONYLALVRELKDAFEPHG-----YLLTA 196
                                                                                                                                                                                                                                                                                                                                                                                                                    197 A -- VSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETD-ELH 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T - - YFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISG 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEGVLSYIELCQLFQKEEWHIQ---YDEYYN----APYGYN--DKIWVGYDDLASISCKL 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363 AFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTP 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DFIKSNNLAGSMFWDVSGDR-------NGTLLTALADQLG---FTPHE 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITIPITIPITIPITIPSPITIPSPIT --- PITTPSPITIPSPITIPITIPITIPIT 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GOEPEEPSSAPTNIQATEVTSTTVTLTWQAPTEEPTQYSVAYDSKEKTTTHTTTTEDLQ 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PITSTPSPITIEH-----TSEIPKYTTYVDG-----HLIKCYKEGD-IPHPINI 519
                                                                                                                                                                                                             8
                                                                                                                                                                       KILIWIVTVILIVTWIRMPADQVVGAABISDDQYKIVAYYPSWGAYGR--DYQVWDIDASKI 66
                                                                                                                                       2 KTIYAILSIMACIGLANASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKC
                                                                                                                                                                                                           THLMYGFAK-----DNP
                                                                                                                                                                                                                                                                                                    PETTYTEVVSAEHKDGIRHAGQALQVTTKSETGGDGCTAPTWQANNVYTGGDQVQHGGKL
                                                                                                       Gaps
                                                                   19.1%; Score 592; DB 2; Length 599;
29.0%; Pred. No. 2.3e-29;
tive 98; Mismatches 216; Indels 134;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----AKWWI--TGEEPGTTGEWGVW 592
A;Experimental source: strain C-125 C;Genetics:
A;Gene: BH0916
                                                                   Query Match
Best Local Similarity 29.0%
Matches 183; Conservative
                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                                                                                                                    186
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                                                                                 RAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQ---YDEYYN- 339
                                                                                                                              RGWDGCAQAGNGQYQTCTGGSSVG--TWEAGSFDFYDL-----EANYINKNGYTRYWND 391
                                                                                                                                                                                                                                                                                                                     395 NKVHMMINGDEKNSFECILGPSTTTPTPTTTPTTTTPTTTPTT--------436
                                                                                                                                                                                                      ---APYGYN--DKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLL 394
487 ASTDNVGVTGYNVYNGANLATSVTGTTATISGLTAGTSYTFTIKAKDAAGNLSAASNAVT
                                                                                                                                                                                                                                          392 TAKVPYLYNASNKRFISYDDAESVGYKTAYIKSKGLGGAMFWELSGDRNK-
                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SPTTTTPSPTTT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTTTPSP--TTPTPTTTPTP-APTTSTPSPTTTEHTSET 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   547 VSTTAQPGGDTQAPTAPTNLASTAQTTSSITLSWTAST 584
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completed: March 22, 2004, 07:01:30 He : 38.0951 secs

Score 561; DB 2; Length 699; Pred. No. 2.3e-27;

18.1%; 29.4%;

Query Match Best Local Similarity

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GenCore version 5.1.6
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OM protein - protein search, using sw model

March 22, 2004, 06:31:13; Search time 21.2868 Seconds (without alignments) 1357.597 Million cell updates/sec Run on:

US-09-662-293-18 3107 1 MKIIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE 555 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

141681 seqs, 52070155 residues Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	iption	P36362 manduca sex	Q13231 homo sapien		Q9w5u3 drosophila				Q28042 bos taurus	ovis	Q61362 mus musculu	Q60557 mesocricetu	Q62010 mus musculu	рошо		papic		_					P32470 aphanocladi			O10363 orgyia pseu			P36909 streptomyce		P11220 streptomyce		9275	12
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Q62635 rattus norv Q05049 xenopus lae O10341 orgyla pseu P10667 xenopus lae P22533 caldocellum P4218 zea mays (m Q06885 dictyostell P47179 saccharomyc P22699 dictyostell P09805 kluyveromyc P24152 sorghum bic P02840 drosophila
MUC2_RAT MUC1_XENLA Y091_WPVOP MUA1_XENLA MANB_CALSA BAYN_MAIZE GP10_DICDI DAN4_YEAST GUN6_DICDI GUN6_DICDI EXTN_SORBI SGS3_DROME
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1513 662 279 400 1331 267 544 1161 705 283
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
244 244 238 230 227:5 2217.5 217.5 217.5 215.5 208:5
и ш ш ш ш ш ц ц ц ц ц ц ц ц ц ц ц ц ц ц

ALIGNMENTS

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Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi.
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                         SEQUENCE FROM N.A. (ISOFORMS 1 AND 2), FUNCTION, AND SUBCELLULAR
                                                                                                                                                                                                 SEQUENCE OF 22-42 AND 178-198, FUNCTION, AND TISSUE SPECIFICITY MEDLINE=95138187; PubMed=7836450;
                                                                                                                                                                                                                       Renkema G.H., Boot R.G., Muijsers A.O., Donker-Koopman W.E., Aerts J.M.F.G., "Purification and characterization of human chitotriosidase, a member of the chitinase family of proteins.", J. Biol. Chem. 270:2198-2202(1995)
                                                                                                                         Boot R.G., Renkema G.H., Strijland A., van Zonneveld A.J., Aerts J.M.F.G.;
"Cloning of a CDNA encoding chitotriosidase, a human chitinase produced by macrophages.";
J. Biol. Chem. 270:26252-26256 (1995).
                                                                                                                                                                                                                                                                                                                           Boot R.G., Renkema G.H., Verhoek M., Strijland A., Bliek J., de Meulemeester T.M.A.M.O., Mannens M.M.A.M., Aerts J.M.F.G. whe human chitotriosidase gene. Nature of inherited enzyme deficiency.";
                                                                                                                                                                                                                                                                                                     POLYMORPHISM, AND DESCRIPTION OF ISOFORM 3.
                                                                                                                                                                                                                                                                                                                                                                             J. Biol. Chem. 273:25680-25685(1998)
                                                                                                                                                                                                                                                                                                               MEDLINE=98421482; PubMed=9748235;
                                                                                                   TISSUE=Macrophage;
MEDLINE=96064695; PubMed=7592832;
                sapiens (Human)
                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---
   290 NKEAGGGDPAPYTNATGF-----WAYYEICTEVDKDDSGWTKKWDEQGKCPYAYKGTQ 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      397 -----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTTAKPASTTKTTVKTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIPITIPSPIT------PIP-TIPIPAPITSTPSPITIEHISETPKYTIYVDGHLI 505
                                                                                                                                                                                                                                                                                                                                                       MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSE 124
                                                                                                                                                                                                                                                                                                                                                                                                        KYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                        KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FECILGPSTTTPTTTTPTTPTTPT-----TTPTTPS-----PTTPTTTPSPTTPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   450 TTTTAKPPQSVIDEENDINVRPEPKPEPQPEPEVEVP-PTENB------VDGSBI 497
                                                                                                                                                                                                                                                                                                                            3 ATLATLAVLALATAV -----QSDSRARIVCY FSNWAVYRPGVGRYGIEDIPVEKCTHI 55
                                                                                                                                                                                                                                                                                                     6 AILSIMACIGLANASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
                                                                                                                                                                                                                                                                               Gaps
Pfam; PF001607; CBM_14; 1.
Pfam; PF00704; GlyCo_hydro_18; 1.
ProDom; PD000471; GlyCo_hydro_18; 1.
SMART; SM00636; GlyCo_18; 1.
SMART; SF00960; CHIT_BIND.
PROSITE; PS50940; CHIT_BIND.
PROSITE; PS01960; CHIT_BIND.
PROSITE; PS01960; CHIT_BIND.
PROSITE; PS01963; CHITIBASE_18; 1.
PROSITE; PS01963; CHITIBASE_18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED------
                                                                                                                                      SER/THR-RICH.
CHITIN-BINDING TYPE-2.
PROTON DONOR (BY SIMILARITY).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                             91;
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                                                                                                                                                                                                                                                      DB 1; Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           - CNSDQDYIPDKKHCDKYWRC--VNGE--AMOFSCOHGTVFNVELNVC
                                                                                                                                                                                                                                                    27.0%; Score 838.5; DB 1; Length E 35.4%; Pred. No. 6.3e-39; ive 79; Mismatches 210; Indels
                                                                                                                                                                                                                            3989D756C96CD490 CRC64;
                                                                                                                            ENDOCHITINASE
                                                                                                                                                                                                                             62203 MW;
                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 35.4
Matches 208; Conservative
                                                                                                                  Glycoprotein.
SIGNAL
                                                                                                                           CHAIN
DOMAIN
DOMAIN
ACT SITE
                                                                                                                                                                                                                  CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                       65
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novel

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Iso'd=Q13231-3; Sequence=VSP 008633;
Note=Duplication of 24 bp in exon 10 leads to the use of a
cryptic splice site. The normal splice site is still present but
                                                                                                         Fusetti F., von Moeller H., Houston D., Rozeboom H.J., Dijkstra B.W., Boot R.G., Aerts J.M.F.G., van Aalten D.M.F.; Boot R.G., Aerts J.M.F.G., van Aalten D.M.F.; Elstrature of human chitotriosidase. Implications for specific inhibitor design and function of mammalian chitinase-like lectins."; J. Blod. Chem. 277:25537-25544 (2002).
-!- FUNCTION: Degrades chitin and chitotriose. May participate in the defense against nematodes and other pathogens. Isoform 3 has no enzymatic activity.
-!- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  цÉ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          macrophages.

POLYMORPHISM: A 24 bp duplication in exon 10 leads to the activation of an alternative splice site and the production of an inactive protein. About 6% of the population are deficient for CHITI activity, while 35% are carriers and show reduced enzyme levels. People with CHITI deficiency appear perfectly healthy. MISCELLANBOUS: Patients with type I Gaucher disease (GD I) [MIM:20800] have very high plasma levels of CHITI, and this can be used as diagnostic aid and to evaluate the success of treatment. Successful therapy brings the CHITI activity levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBCELLULAR LOCATION: Secreted. A small proportion is lysosomal.-!- ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: Detected in spleen. Secreted by cultured
X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 22-386 IN COMPLEX WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VSP_008632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=Q13231-2; Sequence=VSP_008631,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IsoId=Q13231-1; Sequence=Displayed;
                                          CHITOBIOSE AND ALLOSAMIDIN.
MEDLINE=22095530; PubMed=11960986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SUBUNIT: Monomer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              back to normal
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CHT1 HUMAN STANDARD, PRT; 466 AA. Q13231; Q9H3V8; L15-MAR-2004 (Rel. 43, Last sequence update) L15-MAR-2004 (Rel. 43, Last annotation update) Chitotriosidase 1 precursor (EC 3.2.1.14) (Chitinase 1).

RESULT 2
CHT1 HUMAN
LD CHT1 HT
DT 15-MAR
DT 15-MAR
DT 15-MAR
DT 15-MAR
DT 15-MAR

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93 -EKRGYERFINILALKNPELITMISLGGWYEGSEKYSDMAANFTYROOFIOSVLDFLQEYK 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           205 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
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                                                                                                                                                                                                                                            GO; GO:0005615; C:extracellular space; TAS.

R GO; GO:0005615; P:response to bacteria; TAS.

GO; GO:0009613; P:response to bacteria; TAS.

GO; GO:0009613; P:response to bacteria; TAS.

R GO; GO:0009613; P:response to bacteria; TAS.

R GO; GO:0009613; P:response to bacteria; TAS.

R GO; GO:0009613; P:response to bacteria; TAS.

R InterPro; IPR001223; Glyro_hydro_18.

R InterPro; IPR001579; Glyro_hydro_18.

R Pfam; PF01004; Glyro_hydro_18; 1.

R PROMO147; Glyro_hydro_18; 1.

R RART; SM00494; ChtB22; 1.

R RART; SM00494; CHTF_BIND_11; 1.

R ROSITE; PS01095; CHTT_BIND_11; 1.

R ROSITE; PS01095; CHTT_RASE_18; 1.

R Carbohydrate metabolism; Chtin degradation; Polysaccharide degradation; Hydrolase; Glycosidase; Chitin-binding; SIGNAL

T SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23.8%; Score 738; DB 1; Length 466; llarity 34.2%; Pred. No. 1.6e-33; Conservative 85; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SL -> NG (in isoform 2).
/FTIG=VSP 008631.
Missing (in isoform 2).
/FTIG=VSP 008632.
Missing (in isoform 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /FTId~VSP 008633.
51681 MW; B4312D1E885E386D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHITOTRIOSIDASE 1.
CHITIN-BINDING TYPE-2.
BY SIMILARITY.
                                                                                                                            EMBL; U29615; AAC50246.1; -.
EMBL; U62662; AAG10644.1; -.
PDB; 1GUV; 31-JAN-02.
                                                                                                                                                                        PDB; 1LG1; 18-SEP-02.
PDB; 1LG2; 18-SEP-02.
PDB; 1LQ0; 29-JUL-03.
Genew; HGNC:1936; CHIT1.
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466
466
140
370
387
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
es 152; Conserv
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417
140
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307
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DOMAIN
ACT_SITE
DISULFID
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                                                                                                                                                         PDB;
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310 KGATKQRIQ-DQ--KVPYIFRDNQWYGFDDVBSFKTKVSYLKQKGLGGAMVWALDLDDPA 366
                                                                        444
                                                                                                                      ---RYPLIQTLRQELSLPYLPSGT 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=CSTBL/60; TISSUE=Stomach,

WEDLINE=21085660; PubMed=11217851;

WEDLINE=21085660; PubMed=11217851;

WEDLINE=21085660; PubMed=11217851;

Araway T., Shinaqawa A., Shibata K., Yoohno H., Adachi J., Fukuda S.,

Arawawa T., Hara A., Fukunishi Y., Konno H., Machia J., Yamanaka I.,

Alazawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Baito T., Okazaki Y., Golobori T., Bono H., Kasukawa T., Saito R.,

Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Boffelli D., Bolunga N., Carninci P., de Bonaldo M.F.,

Blake J., Bolluga N., Carninci P., de Bonaldo M.F.,

Gustincich S., Hoffmann M., Hume D.A., Kamiya M., Lee N.H.,

Lyons P., Marchiomni L., Machima J., Maszardli J., Sakamoto N.,

Lyons P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

Basaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Hayashizaki Y.,

Hayashizaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Salivary gland;
MEDLINE=22388257; PubMed=12477932;
MEDLINE=22388257; PubMed=12477932;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klauener R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Brownstein M.J., McZenna N.J., Malek J.A., Gunaratne P.H.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
                                                                        GHCGPKNPLLNKVHMMINGDEKNSFECILGPSTTTPTFTTTPTTTPTTPSPTTPTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=21125893; PubMed=11085997; Book R.G., Blommart B.F.C., Swart E., Ghauharali-van der Vlugt K., Bill N., Moe C., Place A., Aerts J.M.F.G.; Annoe C., Place A., Aerts J.M.F.G.; "Identification of a novel acidic mammalian chitinase distinct from
                                                                                                                                                                                                                                                                                                                               CHIA MOUSE STANDARD; PRT; 473 AA.

Q91XA9; Q99PH2; Q9D803; Q9JLN1;
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
15-MAR-2004 (Rel. 43, Last annotation Quality
Acidic mammalian chitinase precursor (EC 3.2.1.14) (AMCase) (YNL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa; Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., SEQUENCE OF 22-43, TISSUE SPECIFICITY, AND FUNCTION.
                                                                                                                      -- FSCNOG
                                                                                                                                                                    PSPTTPTTTPSPTTPTTPSPTTPT 469
                                                                                                                                                                                                                395 PELEVP-KPGQPSEPEHGPSPGQDT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chitotriosidase.";
J. Biol. Chem. 276:6770-6778(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=BALB/c; TISSUE=Lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      musculus (Mouse).
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Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Milting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,
"Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                             ACIDIC MAMMALIAN CHITINASE.
CHITIN-BINDING TYPE-2.
BY SIMILARITY.
BY SIMILARITY.
P -> A (IN REF. 1).
P -> A (IN REF. 1).
                                                                                                                                                                                                                                                                                                         hydrolases).
SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                   and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GO; GO: 0004568; F: chitinase activity; IDA. GO: GO: 0006032; P: chitin catabolism; IDA. InterPro; IPR002557; Chitin bind PerA. InterPro; IPR001223; Glyco hydro 18. InterPro; IPR001579; Glyco hydro 18.
                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF290003; AAG60018.1; -.
EMBL; AK008633; BAB25795.1; -.
EMBL; BC011134; AAH11134.1; ALT_INIT.
EMBL; BC034548; AAH34548.1; ALT_INIT.
EMBL; AF154571; AAF31644.1; -.
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                                                                                                                                        SEQUENCE OF 2-473 FROM N.A.
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473 AA;
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DISULFID
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                                                                                                                                                                                                                                            306
                      191
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                                                                                                                                                                                                                                                                                                                                                  292 GPYTRQAGFWAYYEICTFLRSGATEVW----DASQEVPYAYKANEWLGYDNIKSFSVKAQ 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                    392
75 KYTIQVFDPYQDDNHNSW-EKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANP 133
                                                                                                                    114 ONROTFITSVIKFLRQYGFDGLDLDWBYPGSR-GSPPQDKHLFTVLVKEMREAFEQEAIE 172
                                                                                                                                                                                                                                                                  233 TETGS-NAYLNVDYVMYWKONGAPAEKLIVGFPEYGHTFILRNPSDNGIGAPISGDGPA
                                                                                                                                                                                                                                                                                                                           GFISGEEGVLSYIELCQLFQK---EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                348 WLKONNFGGAMIWAIDLDDFTGSFCDOGKFPLTSTLNKA-------LGISTE
                                                                             134 TYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG--
                                                                                                                                                                                                  173 SNRPRLMVTAAVAGGISNIQAGYEIPELSKYLDFIHVMTYDLHGSWEGYTGENSPLYKYP
                                                                                                                                                                                                                                            247 DETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPP
                                                                                                                                                            192 ----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRP
                                                                                                                                                                                                                                                                                                                                                                                                            364 FLKELGVSGVMVWSLENDDFKG-HCG----PKNPLLNKVHNMINGDEKNSFECILGPSTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  de la Vega H., Specht C.A., Liu Y., Robbins P.W.;
"Chitinases are a multi-gene family in Aedes, Anopheles and
Drosophila..."
-1. CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-
acetyl-Deglucosamine polymers of chitin.
-1. SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl
hydrolases).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=22426071; PubMed=12537574;
Hoskins R.A., Smith C.D., Carlson J.W., Carvalho A.B., Halpern A.,
Kaminker J.S., Kennedy C., Mungall C.J., Sullivan B.A., Sutton G.G.,
Yasuhara J.C., Wakimoto B.T., Myers B.W., Celniker S.B., Rubin G.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Heterochromatic sequences in a Drosophila whole-genome shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome Biol. 3:RESEARCH0085.1-RESEARCH0085.16(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHII DROME STANDARD; FRI; CONTROL OF CHII DROME STANDARD; FRI; CHII; CONTROL OF CT. 2003 (Rel. 42, Last sequence update) 10-OCT-2003 (Rel. 42, Last annotation update) Probable chitinase 1 (EC 3.2.1.14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=98324849; PubMed=9662472;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419 TPTPTTTPTTTP 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               393 GCTAPDVPSEPVTTP 407
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assembly.";
                                                                                                                                                                                                                                                                                                                           307
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12; 74 64

Gaps

57;

DB 1; Length 473;

23.6%; Score 734.5; DB 1; Length 36.3%; Pred. No. 2.5e-33; tive 72; Mismatches 148; Indels

Matches 158; Conservative

13

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Similarity

Local

Query Match

16 LANASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGRAKIDEY LLNAQLGSAYN-----LICYFTNWAQYRPGLGSFKPDDINPCLCTHLIYAFAGMQNN

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 323
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---EKRGYERFINILRLKNPELTTMISLGGWYEGS-EKYSDMAANPTYRQOFIOSVLDFLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EYKFDGLDLDWEYP----GSRLGNPKIDKONYLALVRELKDAFEPHGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                               RINEL; AF026500; ALL.
RILGEPEO; IPR00122703; Chtl.
RILGEPEO; IPR001223; Glyco_hydro_18.
RILGEPEO; IPR001279; Glyco_hydro_184.
REAM; PF00704; Glyco_hydro_18; 2.
DR PRD000; PF000471; Glyco_hydro_18; 2.
DR SNRT; SN00636; Glyco_18; 1.
DR SNRT; SN00636; Glyco_18; 1.
RW PROSITE; PS01095; CHITINASE 18; 1.
RW Hydrolase; Glycosidase; Chitin degradation; Multigene family.
ACT SITE 264 264
PROTON DONOR (BY SIMILARITY).
ACT SITE ... 57751 MW; 26CA23B02EFDEE97 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. (ISOFORM 1), FUNCTION, AND TISSUE SPECIFICITY TISSUE=Lung, and Stomach; MEDLINE=21125893; PubMed=11085997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [1]
SEQUENCE FROM N.A. (ISOFORMS 2 AND 3).
TISSUB-Lung;
MEDLINE-20018184; PubMed=10548734;
Saito A., Ozaki K., Fujiwara T., Nakamura Y., Tanigami A.;
Isolation and mapping of a human lung-specific gene, TSA1902, encoding a novel chitinase family member.";
Gene 239:325-331(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                             23.3%; Score 723; DB 1; Length 508; 39.8%; Pred. No. 1.1e-32; tive 71; Mismatches 121; Indels ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHIA HUMAN STANDARD, PRT; 476 AA.

OSBZP6; Q86UD8; Q9ULY3; Q9ULY4;

15-MAR-2004 (Rel. 43, Created)

15-MAR-2004 (Rel. 43, Last sequence update)

15-MAR-2004 (Rel. 43, Last sequence update)

Acidic mammalian chitinase precursor (EC 3.2.1.14) (AMCase)

(TSA1902).
      email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
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R. BOOR R.G., Bloomest E.S., C., Swart E. Glandarali-van der Vlugt K., Bill N. Woe C., Place A., Aerre J.M.F.G.,

Bill N. Woe C., Place A., Aerre J.M.F.G.,

R. Tierntification of a novel actific mammalian chitinase distinct from Thiconications. P. C. Place A., Aerre J.M.F.G.,

R. TiesTE-Colon.

R. TiesTE-Colon.

R. Kinner R.D., Collins F.S., Webmer L.H., Derge J.G.,

R. Mischer R.D., Collins F.S., Webmer L.M., Schaffer C.P., Bahr N.K.,

R. Mischer R.D., Collins F.S., Webmer L.M., Schaffer C.P., Bahr N.K.,

R. Mischer R.D., Collins F.S., Webmer B. A., Grouse L.H., Derge J.G.,

R. Mischer R.D., Collins F.S., Webmer B. A., Grouse E.H., Derge J.G.,

R. Mischer R.D., Collins F.S., Webmer B. A., Grouse R.D., Millang J. Pearge C.P.,

R. Mischer R.D., Collins F.S., Webmer B. A., Grandar R.D., Mischer P. B.,

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R. Mischer R.D., Collins F.S., Mebmer B. A., Grandar R.D., Mischer R.D.,

R. Man S.S., Locker B. B. Bonaid G. M. C., Akramon R.D., Millay S.J.,

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R. Mischer R. M. Wester R.D., Mischer R.J., Mischer R.D.,

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MEDLINE=98324849; PubMed=9662472;
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DOMAIN 4
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DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG----YLLTAAVSPGKDK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FDGLDFDWEYPGSR-GSPPQDKHLFTVLVQEMREAFEQEAKQINKPRLMVTAAVAAGISN 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEGVLSYIELCQL 324
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NDVTLYQAFNGLKNKNSQLKTLLLAIGGWNFGTAPFTAMVSTPENRÖTFITSVIKFLRQYE 131
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTFCNQGKFPLI-----STLKKALGLQSASCTAPAQPIEPITAAPSGS 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Peloderinae; Caenorhabditis.
PROSITE; PS50940; CHIT BIND II; 1.
PROSITE; PS01095; CHITINASE 18; 1.
Carbohydrate metabolism; Chītin degradation;
Polysaccharide degradation; Hydrolase; Glycosidase; Chitin-binding; Signal; Alternative splicing, n. c.....
                                                                                                                                                                                                                                                                                                                                                                                                                                37;
                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 476;
                                                                                                                  BY SIMILARITY.
ACIDIC MAMMALIAN CHITINASE.
CHITIN-BINDING TYPE-2.
POLY-SER.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
MISSING (In isoform 3).
/FIId=VSP_008634.
MISSING (In isoform 2).
/FIId=VSP_008635.
I -> V (IN REF. 1).
V -> G (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                           ; Score 708.5; DB 1; Length 4; Pred. No. 6.4e-32; 75; Mismatches 154; Indels
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01-NOV-1997 (Rel. 35, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
CHT-1 OR CO4F6.3
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Eukaryota; Metazoa; Nematoda;
                                                                                                                                                                                                                                                                                                                                                          52271 MW;
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35.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                149; Conservative
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                                                                                                                                        476
476
420
140
51
372
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432
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                                                                                                                                                                                                                                                                                                                     339 3
432 4
476 AA;
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Best Local Similarity
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427
415
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CONFLICT
SEQUENCE
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DOMAIN
ACT SITE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --PTTTPTP
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                                                                                                                                                                         glycosyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ycosidase; Chitin degradation; Chitin-binding; Repeat. 178 534 CHITIN-BINDING TYPE-2 1. CHITIN-BINDING TYPE-2 2.
                                                                          Insect Mol. Biol. 7:233-239(1998).

-!- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-acety-1-glucosamine polymers of chitin.

-!- SIMILARITY: Belongs to chitinase class II (family 18 of glycon hydrolases).

-!- SIMILARITY: Contains 2 chitin-binding type-2 domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 617;
Robbins P.W.;
in Aedes, Anopheles and
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ITF -> TTS (IN REF. 2).

I -> L (IN REF. 2).

DDA1D2AAACOE54DA CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90; Mismatches 210;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 705.5; DB
Pred. No. 1.3e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wormep; Cd4F6.3; CE03923.
InterPro; IPR002557; Chitin bind PerA.
InterPro; IPR001253; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18.
Ffam; PF01004; Clyco_hydro_18; 1.
ProDom; P000047; Glyco_hydro_18; 1.
ProDom; P000047; Glyco_hydro_18; 1.
ProDom; SMO484; ChtsD2; 2.
PROSITE; PS01095; CHITINASE_18; 1.
PROSITE; PS01095; CHITINASE_18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THR-RICH.
  le la Vega H., Specht C.A., Liu Y.,
'Chitinases are a multi-gene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66857 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22.7%;
30.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL, U42835; AAA83586.1; -.
EMBL; AF026152; AAB81847.1; -
PIR; T15408; T15408.
PIR; T37249; T37249.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 30.2<sup>3</sup>
Matches 178, Conservative
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                                                                                                  503
                                                                                                                              564
-----PITTPSPTTPTTPSPTTPTPTPTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGH
                                                                                                                 459 İTAATİTITIRAAİTİTIASNİNVCSGKSDGFYPNSINNCGLFVLCLSSKSYSMSCPSGLQYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTPITPSPITTPITPSPIT-----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22.4%; Score 696.5; DB 1; Length 527;
34.6%; Pred. No. 3.2e-31;
ive 86; Mismatches 192; Indels 59; Gaps
                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
Sus.
                                                                                                                                                                                                                                                                                 01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FBS-2003 (Rel. 41, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) Estrogen-dependent oviduct protein) (FOSP-E3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OVIDUCT-SPECIFIC GLYCOPROTEIN.
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                      LIKCYKEGDIPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 552
                                                                                                                                                                       --KCTXDGFFGVPSDCLKFIRC--VNG--ISYNFECPNGLSFHADTMMC 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- TISSUE SPECIFICITY: Oviduct. -!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LINKED (GLCNAC. . .) (P. 31B78F49CA2363A2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                       Sus scrofa (Pig).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IFR001223; Glyco hydro 18.
InterPro; IFR001223; Glyco hydro 18.
Fram; PF00704; Glyco hydro 18; 1.
Fr00m; PF000471; Glyco hydro 18; 1.
FROSTIE; PS01095; Glyco 18; 1.
FROSTIE; PS01095; CHITINASE 18; FALSE NEG.
Glycoprotein; Fertilization; Signal.
SIGNAL
                                                                                                                                                                                                                                                          527 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58519 MW;
           106 SNSNGQLYPLISVIAKELGG
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                                                                                                                                                                                                                                                          STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxiD=9823;
                                         430
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Q28990;
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                                                58 FASANDSQIVAK-----DARD--ESIFYPEFNQLKERNEKLKTLLSIGGWNFGTSRFT 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          GLSTTVNSSRTCPESLAVTKDLTTDLGILPLGGEAVATETHGRSDNM-TVTPGGGGLVAPT 454
LLLWVGLV--LVLKHHNGAAH---KLVCYFANWA-FSRPGPASILPRDLDPFLCTHLVFA
                                                                                                                 109 TMLSTFTNREKFIRSAIGLLRTHGFDGLDLFFLYPGLR-GSPRRDRWNFLFLLEELLLAF
                                                                                                                                                                               241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
                                                                                                                                                                                                                                                                                                                         282 VGPASPGKYTKQAGFLAYYEVCSFVQRAKKRW---IDHQY-VPYAYRGKEWVGYDDDISF
                                                                                                                                                                                                                                                                                                                                                                            FAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS
                                                                                             128 DMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
                                                                                                                                                            EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                                        PLFSLSDDPK-----SSAYTMNYWRKLGAPPEKLLMGFPTYGRTFRLLKASKNELGAEA
                                                                                                                                                                                                                                                                                           KGMSPPGFISGEEGVLSYIELCQLFQ--KEEWHIQYDEYYNAPYGYNDKIWVGYDDLASI
                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
Bovidae, Bovinae, Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A., AND SEQUENCE OF 19-47.
TISSUB-Oviduct;
MEDLINE=94257768; PubMed=8199272;
Sendal Y., Abe H., Kikuchi M., Satch T., Hoshi H.;
"Purification and molecular cloning of bovine oviduct-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -i- TISSUE SPECIFICITY: Oviduct.
-i- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           494
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
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Q28042;
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19.

10 IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYG 67

Conservative

Similarity

Best Local Sim: Matches 178;

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CARBOHYD
CONFLICT
CONFLICT
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                                                                                                                                                                                                                                                                                                                                                                                                279 VGPASPGKYTKQAGFLAYYEICCFVRRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGY 336
                                                                                                                                                                                                                                                                                                                                                                                                                    KLAFLKELGVSGVMVWSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                          387 TPSPKFWFSTAVNSSRIGPEMPTWTRDLTTGLGILPPGGEAVATETHRKSETWTITPKGE 446
                                                                                                                                                                                                                                                          DMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF 187
                                                                                                                                                                                                                                                                                                             68 FAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKOPELTTMISLGGWYEGSEKYS 127
                                                                                                                                                                                               54
                                                                                                                                                                             10 IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYG 67
                                                                                                                                                                                          106 TMLSTFSNRERFVSSVIALLRTHGFDGLDLFFLYPGLR-GSPARDRWTFVFLLEBILQAF
                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGP_SHEEP STANDARD; PRT; 539 AA.

Q28542; Q28643;
01-NOV-1997 (Rel. 35, Last sequence update)
30-MAY-2000 (Rel. 35, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrugan-dependent oviduct protein) (Estrus-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
                                                                                                                                                          69;
                                                                                                           (POTENTIAL)
                                                                                                                                       DB 1; Length 537;
                                                                                              OVIDUCT-SPECIFIC GLYCOPROTEIN.
N-LINKED (GLCNAC. . .) (POTENT
                                                                                                                                       22.1%; Score 685.5; DB 1; Length 5 33.3%; Pred. No. 1.3e-30; ive 95; Mismatches 183; Indels
                                                                                                           199 N-LINKED (GLCNAC. . .) (PC
59617 MW; CFDCEE6F0212D791 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TPTPT-TP-----TPAPTTSTPSP----TTTEHTSETP
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PIR; SS7197; SS7197.

InterPro; IPR001223; Glyco_hydro_18.

InterPro; IPR001579; Glyco_hydro_18AS.

Pfam; PF00704; Glyco_hydro_18; 1.

ProDom; PD000471; Glyco_18; 1.

PROSITE; PS01095; GHTINASE_18; FALSE_NEG.
Glycoprotein; Fertilization; Signal.

NON TER 1 1 1

SIGNAL 1 18
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SEQUENCE FROM N.A., AND SEQUENCE OF
                                                                                                                                                            173; Conservative
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OVGP1 OR OGP.
                                                                                        18
537
399
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19 5
399 3
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                                                                                                             CARBOHYD
                                                                                                                      SEQUENCE
                                                                                                                                         Query Match
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Marshall J.T.A., Nancarcow C.D., Brownlee A.G.;

Marshall J.T.A., Nancarcow C.D., Brownlee A.G.;

"Cloning and sequencing of a CDNA encoding an ovine
costrus—associated oviducal protein.";

"Exprod. Fertil. Dev. 8:305-310(1996).

"I FUNCTION: Binds to cocyte zona pellucida in vivo. May play a role
in the fertilization process and/or early embryonic development.

"I SUBCELLULAR LOCATION: Secretory granules.

"I TISSUE SPECIFICITY: Oviduc.

"I TISSUE SPECIFICITY: Oviduc.

"I DEVELOPMENTAL STAGE: Levels are highest in the fimbria and ampulla
t estrus and nday 1 of pregnancy, when gamete transport and
fertilization occurs in the E2-dominated fallopian tube. Levels
decline significantly on day 2 and undergo a further significant
reduction on day 3 of pregnancy coincident with transport of the
embryo from the oviduct to the uterus, a reproductive stage
associated with rising progesterone levels.

"I SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropaen Bioliformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68 FAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELITMISLGGWYEGSEKYS 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 LLLWVGLL---LMLKHHDGAAH--KLVCYFTNWA-FSRPGSASILPRDLDPFLCTHLVFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64; Gaps
                                  Desouza M.M., Murray M.K.;
"An estrogen-dependent secretory protein, which shares identity with chitinases, is expressed in a temporally and regionally specific manner in the sheep oviduct at the time of fertilization and embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22.0%; Score 685; DB 1; Length 539; 33.8%; Pred. No. 1.4e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90; Mismatches 185; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13 M -> V (IN REF. 2).
122 K -> N (IN REF. 2).
282 A -> V (IN REF. 2).
375 A -> V (IN REF. 2).
520 I -> T (IN REF. 2).
59535 MW, F35000269987C193 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal. BY SIMILARITY. OVIDUCT-SPECIFIC G
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EMBL, U17988; AAB01052.1; -.
PIR; 146470; 146470.
InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR00123; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PP00704; Glyco hydro 18; 1.
PR050m; PD000471; Glyco 18; 1.
PR051TE; PS01095; CHITINASE 18; FALSE NEG. Glycoprotein; Fertilization; Signal.
                                                                                                                                                                                                                                                                                              STRAIN=Merino, TISSUE=Oviduct;
MEDLINE=96329120; PubMed=8726871;
MEDLINE=95269691; PubMed=7750470;
                                                                                                                                                                                              Endocrinology 136:2485-2496(1995)
                                                                                                                                                                                                                                                               SEQUENCE OF 10-539 FROM N.A.
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381 AA;
                                                                                                                 Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rissum-oviduct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IISSUE=Oviduct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       glycoprotein."
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CHAIN
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                             93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                            Query Match
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STRAIN=FVB/N, TISSUE=Breast;
MEDLINE=95060797; PubMed=7970700;
Morrison B.W., Leder P.;
Morrison B.W., and tas initiate murine mammary tumors that share genetic markers generally absent in c-myc and int-2-initiated tumors.";
Oncogene 9:3417-3426(1994).
                                               PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
                                                                                                                                           KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
                                                                                                                                                                                                                                                     282 AGPASPGKYTKQAGFLAYYEVCSFVQRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGY
                                                                                                                                                                                                                                                                                                                              340 KAFFIKREHFGGAMWATLDLDDFRGNFCGTGPFDAHTLNNLLVNDEFSS------
                                                                                                                                                                                                                                                                                                                                                                                            TPTP----TTTPTTTPTTTPSPTTPSPTTPSPTTP-----TTTPSPTTPTTPSPT
                                                                                                                                                                                                                                                                                                                                                                                                                                      390 TPSPKFWFSTAVNSSRIGPEMPTMTRDLTTGLGILPLGGEAVATETHRKSATMTTTPRGE
                       EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                                                                                  KLAFLKELGVSGVMVWSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GP-39) (BRD39 protein).
CHI311 OR BRB39.
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutherra; Rodentia; Sclurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Chitinase-3 like protein 1 precursor (Cartilage glycoprotein-39)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             similarity).
-!- SUBCELLULAR LOCATION: Extracellular (By similarity).
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: May play an important role in the capacity of respond to and cope with changes in their environment (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TPTPT-TP-----TPAPITSTPSPTTTEHTS 491
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MGD; MGI:1340899; Chi311.
InterPro; IPR00123; Glyco_hydro_18.
InterPro; IPR00123; Glyco_hydro_18AS.
Pfam; PF00704; Glyco_hydro_18 1.
ProDom; PD000471; Glyco_hydro_18; 1.
ProDom; PD000471; Glyco_hydro_18; 1.
PR051TE; PS01095; Glyco_18; 1.
Glycoprotein; Signal.
SIGNAL.
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061362;
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                                                                                                                                                                                                                                                                                                                                                                                                                71 EWNDESNYDKLANKLKTRNTNLKTLLSVGGWKFGEKRFSEIASNTERRIAFVRSVAFFLRS 130
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 244 YMIRLGAQASKLIMGIPTFGKSFTLAS-SENQLGAPISGEGLPGRFTKEAGTLAYYEICD 302
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                                                                                                                                                                                                                                                                                       23 KLYCYFISWSQYREGVGSFLPDAIQPFLCTHIIYSFANIS------SDNMLSTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150 YKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF----EP--HGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                324 LFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131 YGFDGLDLAWLYPRLR-----DKQYPSTLIKELNAEFTKEVQPGREKLLLSAALSAGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            204 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH
                                                                                                                                                                                                                                                    34 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                        Gaps
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Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Cricetinae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OGP_MESAU STANDARD; PRT; 671 AA.
060557; Q60526;
01-NOV-1997 (Rel. 35, Last sequence update)
15-UL-1999 (Rel. 38, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (ZP-0).
                                                                                                                                                                                        34;
                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               due
                                                                                                                           Length 381;
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MEDLINE=96115007; PubMed=7492686;
Suzuki K., Sendai Y., Onuma T., Hoshi H., Hiroi M., Araki
"Molecular characterization of a hamster oviduct-specific
                                                                                                                     21.9%; Score 680; DB 1; Length 38 37.1%; Pred. No. 1.8e-30; ive 75; Mismatches 130; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Paquette Y.;
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
381 CHITINASE-3 LIKE PROTEIN 1.
60 N-LINKED (GLCNAC. . .) (POI
43001 MW; EF6581E8184F0450 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 14-671 FROM N.A., AND REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mesocricetus auratus (Golden hamster).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mol. Reprod. Dev. 42:388-396(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384 KGHCGPKN--PLLNKVHNMI 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=96192955; PubMed=8607967;
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                                                                                                                                                                                           Matches 141; Conservative
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                                                                                                                                                                                                                                282 MGPASPGKYTKQAGFLAYYEVCSFIQRAEKH--WIDHQYVPYAYKGKEWVGYDDAVSFSY 339
                                                                                                                                                                                                                                                                                                 340 KAMFVKKEHFGGAMVWTLDMDDVRGTFCGNGPFPLVHILNELLVRAEFNSTPLPQFWFTL 399
                                                                                                                                                                                                           KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                                                                                                                                                                                                                    414 GPSTTTPTTTTTTTTTTTTTTPTTPSPTTP-------TTTPSP--TTPTTPS 455
                                                                                                                                                                                                                                                                                                                                                                                                                        --------PTTTP----SPTTPTPTPAPTTSTPSPTTTEHTSETP 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PTTHAVALERNAMAPGAKTTTSLDLLSETMTCMTVTVQTQTAGRETMTTVGNQSVTP 516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109 TMLSTLASREKFIGSVVSFLRTHGFDGLDLFFLYPGLR-GSPINDRWNFLFLIEELQFAF
                                                                                      EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                      PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
                                                                                                                                                                                                                                                                               KLAFLKELGVSGVMVWSLENDDFKG-HCG-PKNPLLNKVHNMINGDEKNS-----FECIL
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DMAANPTYROOFIOSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Molecular cloning and characterization of a mouse oviduct-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1997 (Rel. 35, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Strogen-dependent oviduct protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=ICR; TISSUE=Oviduct;
MEDLINE=96115001; PubMed=7492680;
Sendai Y., Komiya H., Suzuki K., Onuma T., Kikuchi M., Hoshi H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721 AA
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InterPro; IPR001579; Glyco hydro 18AS.
Pfam; PF00704; Glyco hydro 18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProDom; PD000471; Glyco hydro 18; 1.
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Q62010;
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                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS 127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
                                                              zona pellucida-binding glycoprotein.";
Biochem. J. 295:437-445(1993).
-!- FUNCTION: Binds to occyte zona pellucida in vivo. May play a role in the fertilization process and/or early embryonic development.
Might act as a protective secretion influencing the first steps of the reproductive process necessary for the normal triggering of 'fertilization and early embryonic development.
-!- SUBCELLULAR LOCATION: Secretory granules.
-!- TISSUE SPECIFICITY: Oviduct.
-!- PTM: HIGHLY O-GLYCOSYLATED AND ALSO N-GLYCOSYLATED.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolasses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=94058981; PubMed=8240241;
Malette B., Bleau G.;
"Biochemical characterization of hamster oviductin as a sulphated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C -> A (IN REF. 4).
H -> I (IN REF. 4).
D -> G (IN REF. 2 AND 3).
R -> Q (IN REF. 2 AND 3).
F -> Y (IN REF. 2 AND 3).
Q -> L (IN REF. 2 AND 3).
MISSING (IN REF. 2 AND 3).
T -> I (IN REF. 2 AND 3).
W; BBSTEOES14EC1972 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21.9%; Score 680; DB 1;
33.3%; Pred. No. 3.4e-30;
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InterPro; IPRO11223; Glyco_hydro_184.
InterPro; IPRO11579; Glyco_hydro_184.
ProDom; PD000471; Glyco_hydro_18; 1.. SMART; SM00056; Glyco_hydro_18; 1.. PROSTER; PS01095; CHTINASE 18; FALSE NEG. Glyco_PROSTER; PS01095; CHTINASE 18; FALSE NEG. Glyco_Procein; Fertilization; Repeat; Signal.
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193
531
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671 AA;
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   SEQUENCE
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CARBOHYD
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                                                                                                                                                                                                                ----YPEFNKLKERNRELKTILLSIGGWNFGTSRFTAMLSTLANREKFIDSVISFLRING 132
                                                                                                                                                                                                                                          FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
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                                                                                                                                                                        306 VQRAKKH--WIDYQYVPYAFKGKEWLGYDDTISFSYKAMYVKREHFGGAMYWTLDMDDVR
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                                                                                                                                                                                                                                                                                                                                                                                                                    ---TTTPTTTTTTTTTTPSPTTP-----TTTPS--PTTPTTPSPTTTPTTF
                                      CVIDUCT-SPECIFIC GLYCOPROTEIN.

21 X 7 AA TANDEM REPEATS OF S-K-T-T-
(TAP)-G-[LY).

102 N-LINKED (GLCNAC. . .) (POTENTIAL).

142 N-LINKED (GLCNAC. . .) (POTENTIAL).

169 N-LINKED (GLCNAC. . .) (POTENTIAL).

18907 MW, 37246C8F01665652 CRC64;
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Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 012889; 015841; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 10-OCT-2003 (Rel. 42, Last annotation update) 0viduct-specific glycoprotein precursor (Oviductal glycoprotein) (Oviductin) (Estrogen-dependent oviduct protein) (Mucin 9). OVGPI OR OGP OR MUC9.
                                                                                                                                          82;
                                                                                                                      DB 1; Length 721;
                                                                                                                   21.9%; Score 680; DB 1; Length 72 33.7%; Pred. No. 3.6e-30; ive 79; Mismatches 184; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     470 PITPTP-----APTISTPSPITT---EHTSETPKYTTYV 500
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                   Signal.
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SMART; SM00636; Glyco_18; 1.
PROSITE; PS01095; CHTINASE 18; FALSE NEG-Glycoprotein; Fertilization; Repeat, Signas SIGNAL
                                                                                                                                          Conservative
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469
721 AA;
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Matches 175; Conserv
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MEDLINE=95119256; PubMed=7819450; Arias E.B., Verhage H.G., Jaffe R.C.; "Complementary deoxyribonucleic acid cloning and molecular

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PAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELLTMISLGGWYEGSEKYS 127
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FASMNINQI ----VAKDLQD-----EKILYPEFNKLKERNRELKTILSIGGWNFGTSRFT 108
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characterization of an estrogen-dependent human oviductal
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GO; GO:0007565; P:pregnancy; TAS.
InterPro; IPR001223; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18.
Ffam; PF00704; Glyco_hydro_18; 1.
SNADT; SN00636; Glyco_18; 1.
PROSITE; PS01095; CHITINASE_18; FALSE_NEG.
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EMBL; US8003, AAB04126.1; JOINED.
EMBL; US8004, AAB04126.1; JOINED.
EMBL; US8005, AAB04126.1; JOINED.
EMBL; US8005, AAB04126.1; JOINED.
EMBL; US8006, AAB04126.1; JOINED.
EMBL; US8008, AAB04126.1; JOINED.
EMBL; US8008, AAB04126.1; JOINED.
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EMBL; U58010; AAB04126.1; -.
EMBL; U58001; AAB04126.1; JOINED.
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Biol. Reprod. 51:685-694(1994)
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              168 RKEALLIMRPRILLSAAVSGVFHIVQTSYDVRFLGRLIDFINVLSYDLHGSWERFTGHNS 227
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MEDLINE=94064558; PubMed=8245017;
Hakala B.E., White C., Recklies A.D.;
"Human cartilage gp-39, a major secretory product of articular chondrocytes and synovial cells, is a mammalian member of a chitinase
                                                                                                                EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNYMTYDYHGGWENFYGHNA
                                                                                                 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
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DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
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Nyirkos P., Golds B.E.;
"Human synovial cells secrete a 39 kDa protein similar to a bovine
"Human synovial cells secrete a 39 kDa protein similar to a bovine
mammary protein expressed during the non-lactating period.";
Biochem. J. 269:265-268(1990).
-!- FUNCTION: May play an important role in the capacity of cells to
respond to and cope with changes in their environment.
-!- SUBCELDUAR LOCATION: Extracellular.
-!- TISSUB SPECIFICITY: Present in articular chondrocytes, synovial
cells as well as in liver. Undetectable in muscle tissues, lung,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rehli M., Krause S.W., Andressen R.; "Molecular characterization of the gene for human cartilage gp-39 (CH131), a member of the chitinase protein family and marker for late stages of macrophage differentiation.";
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P3622; P30923;
O1-UUL-1993 (Rel. 26, Created)
O1-UUN-1994 (Rel. 26, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Chitinase-3 like protein 1 precursor (Cartilage glycoprotein-39)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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J. Biol. Chem. 268:25803-25810(1993).
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TISSUE=Blood;
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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pancreas, mononuclear cells, or fibroblasts.
-!- PTM: Glycosylated.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81; Mismatches 136; Indels
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N-LINKED (GLCNAC. . .) (POT
76ADD8298EEEC2D1 CRC64;
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GO; GO:0005615; C:extracellular space; TAS.
GO; GO:0005201; F:extracellular matrix structural con interPro; IPR001223; GIyco hydro 18.
InterPro; IPR001579; GIyco hydro 18.
Fam; PF00704; GIyco hydro 18; 1.
ProDom; P0000471; GIyco hydro 18; 1.
SMART; SM00636; GIyco 18; 1.
PROSITE; P801095; CHITINASE 18; FALSE NEG.
GIycoprotein; Signal; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21.3%; Score 662; DB 1; 34.9%; Pred. No. 1.7e-29;
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EMBL; Y08374; CAA69661.1; --
EMBL; Y08375; CAA69661.1; JOINED.
EMBL; Y08375; CAA69661.1; JOINED.
EMBL; Y08377; CAA69661.1; JOINED.
EMBL; Y08378; CAA69661.1; JOINED.
PIR; A49562; A49562.
Genew; HGNC.1932; CHI3L1.
MIM; 601525; --
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383 AA; 42613 MW;
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Best Local Similarity 34.9°
Matches 144; Conservative
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PRT;

STANDARD;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Bucopean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10 IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                  "Cloning of a recombinant complementary DNA to a baboon (Papio anubis) estradiol-dependent oviduct-specific glycoprotein.";
Mol. Endocrinol. 5:356-364(1991).
-!- FUNCTION: Binds to oocyte zona pellucida in vivo. May play a role
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87; Mismatches 200; Indels 121; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Oviduct;
MEDLINE=98244335; PubMed=9584944;
WEDLINE=98244335; PubMed=9584944;
Verhage H.G., Fazleabas A.T., Mavrogianis P.A., O'Day-Bowman M.B.,
Donnelly K.M., Arias E.B., Jaffe R.C.;
"The baboon oviduct: characteristics of an oestradiol-dependent
                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
           01-JUN-1994 (Rel. 29, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             623 OVIDUCT-SPECIFIC GLYCOPROTEIN.
402 N-LINKED (GLCNAC. . .) (POTENTIAL)
441 N-LINKED (GLCNAC. . . ) (POTENTIAL)
69291 MW, 9E21CE481FFF1268 CRC64;
                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Oviduct;
MEDLINE=91367180; PubMed=1716345;
Donnelly K.M., Fazleabas A.T., Verhage H.G., Mavzogianis P.A., Jaffe R.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21.1%; Score 654.5; DB 1; Length 623; 30.7%; Pred. No. 7.6e-29;
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InterPro; IPR001223; Glyco hydro 18.

InterPro; IPR001223; Glyco hydro 18AS.

Pfam; PF00704; Glyco hydro 18; 1.

ProDom; PD000471; Glyco hydro 18; 1.

SWART; SW00636; Glyco 18; 1.

PROSITE; PS01095; GIYCO 18; 1.

PROSITE; PS01095; GITINIASE 18; FALSE NEG.
Glycoprotein; Fertilization; Signal.

SIGNAL
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                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY PARTIAL SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                        oviduct-specific glycoprotein.";
Hum. Reprod. Update 3:541-552(1997).
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                                                                                                           Papio anubis (Olive baboon)
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Matches 181;
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                                                                                                     188 EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA 240
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                                                                                                                                        301 KGMSPPGFISGEEGVLSYIELCOLF - OKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASI
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Search completed: March 22, 2004, 06:53:05 Job time : 22.2868 secs

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March 22, 2004, 06:39:53 ; Search time 111.679 Seconds (without alignments) 1568.003 Million cell updates/sec
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1 MKTIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE 555
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		Description	Q9u6r7 dermatophag	044079 anopheles g	Q8ish5 araneus ven	O17412 aedes aegyp	Q9w2z3 drosophila	Q9ggc4 bombyx mori	Q8mp05 tenebrio mo	Q8wr52 bombyx mori	O15993 penaeus jap	Q9gr93 bombyx mori			Q9vfr3 drosophila	Q9w2m7 drosophila	Q8itu3 penaeus van	Q9gpg9 bombyx mand
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IBA	Gaps
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chnida; Acari; dia; Analgoidea from tabases. glycosyl bonds; CRC64;	Length Indels
Created) Last sequence update) Last sequence update) Last sequence update) use-dust mite). das, Chelicerata; Arachnida; das, Chelicerata; Arachnida; des. EMBL/GenBank/DDBJ databases That; IEA. ding; IEA.	Score 3107; DB 5; Pred. No. 2.9e-186; Mismatches 0;
MBLrel. 13, Created) MBLrel. 13, Last sequence update) MBLrel. 25, Last sequence update) MBLrel. 25, Last sequence update) farinae (House-dust mite). copilformes, Astigmata; Psoroptic ermatophagoides. A. A. S., Stedman K., McCall C.; racterization of a 98 kba Allerge farinae."; 999) to the EMBL/GenBank/DDBJ dat A. Farinae."; 999) to the EMBL/GenBank/DDBJ dat A. Farinae."; Psydrolase activity, acting on g P:chitin binding; IEA. F:chitin binding; IEA. F:chitin binding PerA. 223; Glyco-hydrol8: 1 Glyco-hydrol8: ChEB2; 1. ChEB2; 1. Glyco-lydrol8: Glyco-lydrol8: CHEB2; 1. Glyco-lydrol8: A. G1328 MW; OE4564AlA459B30B C A. 63238 MW; OE4564AlA459B30B C	Score 3107; Pred. No. 2. Mismatches
MELLEL. 13, Created) MELLEL. 13, Last sequence MELLEL. 25, Last annotation. farinae (House-dust mite oa; Arthropoda; Chelicera coptiformes; Astigmata; Permatophagoides. A. A. A. A. A. A. A. C. Stedman K., McCall farinae."; McCall farinae."; McCall farinae."; McCall farinae."; McCall farinae."; McCall farinae."; McCall Fracteriation of a 98 kDa farinae."; McCall farinae.	
ARY; el. 13, Cr el. 13, La el. 13, La el. 13, La el. 25, La inae (Hous inae."; tophagoide cothe Ex to the Ex to the Ex to the Ex tracellula- tracellul	100.0%; 100.0%; ive
T. 1 QUUGRY PRELIMINARY; PRT; 555 AA. QUUGRY; Ol-MAY-2000 (TrEMBLrel. 13, Created) Ol-MAY-2000 (TrEMBLrel. 13, Last sequence update) Ol-MAY-2000 (TrEMBLrel. 13, Last sequence update) Ol-MAY-2000 (TrEMBLrel. 13, Last sequence update) Ol-MAY-2000 (TrEMBLrel. 25, Last arnotation update) Dermatophagoides farinae (House-dust mite). Dermatophagoides farinae (House-dust mite). Roariformes; Sarcopiformes; Astigmata; Psoroptidia; Analgoidea Pyroglyphidae; Dermatophagoides. MCBI TAXID=6954; [1] SEQUENCE FROM N.A. "Cloning and Characterization of a 98 kDa Allergen from Dermatophagoides farinae."; SEQUENCE FROM N.A. "Cloning and Characterization of a 98 kDa Allergen from Dermatophagoides farinae."; SEQUENCE FROM N.A. "Cloning and Characterization of a 98 kDa Allergen from Dermatophagoides farinae."; SCOURNO CHARACTERINAE. IEA. GO; GO: 00008576; C: Cextracellular; IEA. GO; GO: 0000801; F: chitin binding; IEA. GO; GO: 0000801; F: chitin binding; IEA. GO; GO: 0000801; F: chitin binding; IEA. GO; GO: 0000801; F: chitin binding; IEA. GO; GO: 0000801; F: chitin metabolism; IEA. InterPro; IPRO01223; Glyco.hydro.184. ERODOH; Glyco.hydro.18; 1. SWART; SW00494; ChtBD2; 1. SWART; SW00494; ChtBD2; 1. SWART; SW00494; ChtBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1. SWART; SW00494; CHTBD2; 1.	vat
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Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea, Anopheles.
NCBI_TaxID=7165;
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MEDLINE=98030563; PubMed=9360958;
Shen Z., Jacobe-Lorena M.;
"Characterization of a novel gut-epecific chitinase
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J. Biol. Chem. 272.2889-28900 (1997).

Bibl. AF008575, AB897764.1;

EMBL; AF008575, C:extracellular; IEA.

GO; GO:0005576, C:extracellular; IEA.

GO; GO:0005975; P:chitin binding; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

InterPro; IPR002557; Chitin bind PerA.

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InterPro; IPR001253; Glyco hydro 18.
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                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                        S VGVIVLVAVAAAAFAEEEPHKAASAEGKKVVCYVGTWAVYRPGNGRYDIEHIDPSLCTHLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183 EPDHYGLILTAAVASVEFSAGVSYDIPRISKSFHFLNVMVYDMHGAMDSYCGINAPLYRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303 VGRYTREPGVMGYNEFCEKLATAAMDLRWSEEQQVPYAVRNNQWVGYDDLRSVQLKVKYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363 LDQGLGGAMVWSLETDDFLGVCGGGRYPLMHEIRSLVNGGT------PSTTTMPPSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425 TPTTPTTTPTTPSPTTPTTTPSPTTPTTTPSPTTPTPSPTTPTPTPTPAPTTSTPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YGFAKIDBYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65 YGFFGINE-DATVRIIDPYLDLEEN-WGRGHIKRFVGLKNVGPGLKTLAAIGGWNEGSRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126 YSDMAANPTYRQOPIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123 FSAMAASGELRKRFISDCVAFCORHGFDGIDLDWEYPAORDGNPLIDRDNHAQLVEEMRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       186 AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246 PDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    366 KELGVSGVMVWSLENDDFKGHC-GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTPTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                414 APTT----STVAPGTTTTTPTGANPGTTQPPT--SDAPNHTTTSTTTEGNPGTTRPPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     485 ITTEHTSETPKYTTYVDGHLIKCY--KEGDIPHPINIHKYLVC-----EFVNGGWWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 LSIMACIGLMNASIKRD-HNDYSKNPWRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLM
                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Araneidae; Araneus.
NCBI_TaxID=182803;
                                                                                                                                                                                                                                                                                                       59,
                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Han J.H., Kim S.R., Sohn H.D., Jin B.R.;
"Molecular cloning of a cDNA encoding the chitinase from
                                                                                                                                                                                                                                            32.5%; Score 1008.5; DB 5; Length
38.4%; Pred. No. 4e-55;
.ive 93; Mismatches 187; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                          525 AA; 57211 MW; 3234360EEFF36165 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
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Pfam; PF01607; CBM 14; 1.

Pfam; PF00704; GlyCo_hydro_18; 1.

ProDom; PD000471; GlyCo_hydro_18; 1.

SMART; SM00494; ChtBD2; 1.

SMART; SM00536; GlyCo_18; 1.

PROSITE; PS01095; CHITINASE_18; 1.

GlyCosldase; Hydrolase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, 01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Araneus ventricosus.";
Submitted (JUN-2002) to the
EMBL; AY120879; AAN39100.1;
                                                                                                                                                                                                                                            Query Match 32.5%
Best Local Similarity 38.4%
Matches 211; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  536 IMPCPPGTIW 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---CPPGTLE
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1057 PTRPPTS-----TTPETTRRPSTTTSTRRTTMTTT--TTRRPTTRRTSAR 1104
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAF 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          937 AGESTRARGFLSYYEICANIRNKKWIVARDRKGRMGPYAYKGDQWVSFDDQYMIRHKSEY 996
GO; GO:0008576; C:extracellular; IEA.

RG GO:0008061; F:chitin binding; IEA.

GO; GO:0008061; F:chitin binding; IEA.

GO; GO:0008061; F:chitin binding; IEA.

GO; GO:0008061; F:chitin binding; IEA.

RG; GO:0006032; P:carbohydrate metabolism; IEA.

RG; GO:0006032; P:chitin databolism; IEA.

RICEPPO; IPRO01223; Glyco_hydro_la.

RICEPPO; IPRO01223; Glyco_hydro_la.

RICEPPO; IPRO01579; Glyco_hydro_la.

REAM: PF00104; Glyco_hydro_la.

RART; SM00494; ChtBD2; 3.

RART; SM00494; ChtBD2; 3.

RART; SM00495; CHITINASE_la.

RART; SM00495; CHITINASE_la.

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

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RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

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RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)

RARGHYD SOURCE (ALTINASE_la.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482 PSPTTTEHTSETPKY-----TTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74 YKYTIQVFDPYQDDNHNSW---EKRGYERFNNLRLKNPELTTMISLGGWYEGS-EKYSDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130 AANPTYROOFIOSVLDFLQEYKFDGLDLDWEYPGSRLGNPK----IDKONYLALVRELKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      186 AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  365 LKELGVSGVMVWSLENDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECIL--GPSTTTPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21 IKRDHNDYSKNPM-----RIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDE
                                                                                                                                                                                                                                                                                                                                          | N-LINKED (GLCNAC. . .) (POTENTIAL) | 322 | 322 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 463 | 463 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 479 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 890 | 890 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 1338 | 1338 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 1479 | 1479 | N-LINKED (GLCNAC. . .) (POTENTIAL) | 1635 AA; 185993 MW; EALLGF83AAC129FA (RC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28.0%; Score 869; DB 5; Length 1635; 34.3%; Pred. No. 8.3e-46; ive 95; Mismatches 196; Indels 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          533 WVHIMPCPPGTIW------CQEKLT 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----LCPGGLYWSVDHCDWPQSTNCRNKQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 196; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     - PESDKILMVDYAINYWIKNGTPKNKVILGMGTYGRSFTLANAANNGLGAATTGPGSAGP 300
                                                                                                                                                                                                                                                                                                                                                                                           66 AKLSNNO--IAVYDPYLDLKEN-WGLGAFORFNNLKKTNPQLSTLIAIGGWNEGSTKYSA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFE 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ||:|: |: |: || || || || || || || ACLLILLVAVAVSAQSRDRNQKKYKVVCYLGSWANYRGGEGKFLIEHIDPFLCTHVIYGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISGEEGVLSYIELCQLPQKEEWHIQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GVSGVMVWSLENDDFKGHC-GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTFTTFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDE
                                                                                                                                                                                                                                                                                      12 ACIGLM--NASIKRDHNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila.";
Insect Mol. 7:233-239(1998).
-!- CATALYTIC ACTIVITY: HYDROLYSIS OF THE 1,4-BETA-LINKAGES OF N-ACETYL-D-GLUCOSAMINE POLYMERS OF CHITIN.
-!- SIMILARITY: BELONGS TO CHITINASE CLASS II (FAMILY 18 OF GLYCOSYL HYDROLASES).
                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Aedes. NCBI_TaxID=7159; [1] SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLINE=98324849; PubMed=9662472; de la Vega H., Specht C.A., Liu Y., Robbins P.W.; de la Vega are a multi-gene family in Aedes, Anopheles and
                                                                                                                                                                                                                                             26;
                                                                                                                                                                                                    Query Match 30.3%; Score 942; DB 5; Length 431; Best Local Similarity 43.6%; Pred. No. 4.6e-51; Matches 185; Conservative 78; Mismatches 135; Indels
                                                                                                                                                                  929439397B9BC923 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-CCT-2003 (TEMBLrel. 25, Last annotation update)
Probable chitinase 2 (EC 3.2.1.14).
  GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
InterPro; IPR00123; GIyoc.hydro_18.
InterPro; IRR01579; GIyoc.hydro_184.
ProDom; PD000471; GIyoc.hydro_18; 1.
SWART; SW00636; GIyoc.l8; 1.
PROSITIS, PS01059; GIYOC.l8; 1.
SEQUENCE 431 AA; 47238 MW; 929439397B9BC923 GI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aedes aegypti (Yellowfever mosquito)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF026492; AABB1850.1;
PIR; T14075; T14075.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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RAMBAINE-2018 50606; Bubbed-1073132;

RAMBAINE-2018 50606; Buther S.E., Li P.W., Hoskins R.A., Galle R.F.,

RAMAGORIES F.G., Scherer S.E., Richards S., Ashburner M., Henderson S.N.,

RAMAGORIES F.G., Rogers Y.-H.C., Blazej R.G., Champe M., Feliffer B.D.,

RAMADORIE C., Rogers Y.-H.C., Blazej R.G., Champe M., Feliffer B.D.,

RAMEN R.H., Doyle C., Baxter E.G., Helt G., Champe M., Feliffer B.D.,

RAMEN R.H., Doyle C., Baxter E.G., Helt G., Champe M., Feliffer B.D.,

RAMEN R.H., Doyle C., Baxendal J., Bayraktaroglu L., Beasley E.M.,

Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,

Burtis R.C., Busam D.A., Deller G., Bayraktaroglu L., Beasley E.M.,

RAMEN R.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,

RAMEN R.M., Cawley S., Dahlke C., Perraz C., Ferriar C., Perriar C., Perras C., Perriar C., Perras C., Perriar C., Perras C., Perriar C., Perras C., Perriar R.M., Glasser K.,

RAMEN R.M., Coup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,

RAMEN R.M., Cawley F., Gorrell J.H., Gu Z., Galbart W.M., Glasser K.,

RAMEN R.M., Harvey D., Hehman T.J., Hernandez J.R., Harris M.L.,

RAMEN R.M., Mouston K.A., Helman T.J., Hernandez J.R., Harris M.L.,

RAMEN R.M., Mouston K.A., Howland T.J., Wei M.-H., Libegwan C.,

Julali M., Kalush F., Karpen G.H., Kez Y., Kennigcon D.,

Merkulov G., Milshina M.V., Mobarry C., Morris J., Moshrefi A.,

Mount S.M., Moy M., Murphy B., Murphy L., Murny D.M., Nelson D.I.,

Relazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Recen M. Spier E., Spradling A.C., Stapleton M., Strong R., Shen H.,

Spier E., Spradling A.C., Stapleton M., Strong R., Shen H.,

Spier E., Spradling A.C., Stapleton M., Strong R., Shen B.,

Millams S.M., Wodessarman D.A., Walssenbach J.,

Millams S.M., Wodese T., Wanner J.C.,

Ramina S.M., Wodese T., Wanner J., Wanner J., Shipson R., Shen B.C.,

Schoec 287, Shense Sequence of Droger B., Shan G.,

Shen S., Stapleton M., Shupson M., Shupson S.,

Why S., Shen S., Shong F.N., Shong F., Sheng K.H., Sheng 
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GO:0008061; R:chitin binding; IEA.
GO:0016798; P:hydxolase activity, acting on glycosyl bonds; IEA.
GO:0005975; P:carbohdrate metabolism; IEA.
GO:0006030; P:chitin metabolism; IEA.
                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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                                                     Last sequence update)
Last annotation update)
PRT; 4498 AA
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InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PF001607; CBM 14; 1.
Pr00bm; PF000497; Glyco hydro 18; 1.
PR05Dm; PR000494; CHSD; 1.
SWART; SW00494; ChtBD; 1.
SWART; SW00636; Glyco 18; 1.
PROSITE; PS01095; CHTINASE 18; 1.
                                    Created)
                                                                                                                                                                                                                                                                               MEDLINE=20196006; PubMed=10731132;
                                  (TrEMBLrel. 13, C
(TrEMBLrel. 13, I
(TrEMBLrel. 25, I
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PRELIMINARY;
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                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                         CG2989 protein.
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SEQUENCE 44
                                    -MAY-2000
                                                   01-MAY-2000
01-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------GSDFKCEEEGFFQHPRDCKKYYWC-LDSGPSGLGIVAHMFTCPSG 566
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Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
NCBI_TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mikitani K., Sugasari T., Shimada T., Kobayashi M., Gustafsson J:A.;
"The Chitinase Gene of the Silkworm, Bombyx mori, Contains a Novel Tc-
like Transposable Element.";
J. Biol. Chem. 275:37725-37732(2000).

EMBL; AF273695; AAG37105.1;
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GO, GO:0005576; C:extracellular; IEA.
GO, GO:000561; F:chitin binding; IEA.
GO, GO:000561; F:chitin binding; IEA.
GO, GO:000561; P:chitin metabolism; IEA.
GO, GO:0006030; P:chitin metabolism; IEA.
InterPro; IPR002557; Chitin_bind_PerA.
                                                                                                                                                                                                                                                                                                                                                                                                                      367 AYRRNQWVGYDDEALVRKKAEYVVAQGLGGIMFWAIDNDDFRGTCNGKPYPLIEAA----
                                                                                                                                                                                                                                                                                                                                         2 KTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYH----KVDPYTIEDID
                                                                                                                 33 QİLFLLCALAYCİ------NEASSEG-RVVCYYTNWSVYRPGTAKFNP---QNİN
                                                                                                                                                                                                                                       115 SLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFLQBYKFDGLDLDWEYPGSRLGNPKIDKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             285 AWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFOKE-EWH-IQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343 GYNDKIWYGYDDLASISCKLAFLKELGVSGYMVWSLENDDFKGHC-GPKNPLLNKVHNMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402 NGDEKNSFECILGPSTTTPTTTPTTTTPTTT------TPSPTT---PTTTP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           479 RPAVSSTQAPP--PSTTFKLTEAEGSSLYIGGRASTTPPPPTTPDP----------
                                                                                                                                                          58 PPKCTHLMY - - GFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMI
                                                                                                                                                                                                                                                                                                                    175 NYLALVRELKDAFEPHG----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYD
                                                                                                                                                                                                                                                                                                                                                                                                    228 YHGGWENFYGHNAPLYKRPDETDELHTY ---FNVNYTMHYYLNNGATRDKLVMGVPFYGR
                                        Gaps
27.5%; Score 854.5; DB 5; Length 4498; 33.8%; Pred. No. 2.2e-44; ive 88; Mismatches 188; Indels 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
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STRAIN-Shunrei x Showgetsu;
MEDLINE-20545518; PubMed-10984482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2001 (TYEMBLIEL 16, 01-MAR-2001 (TYEMBLIEL 16, 01-OCT-2003 (TYEMBLIEL 25,
  Query Match
Best Local Similarity 33.8
Matches 202; Conservative
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09GQC4;
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2448 AAPVGGTDVTEGAYKVVCYFTNW--AMYRQGD------GKYLPQDIDASLCTHINYGFA 2498
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LCQLFQKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   380 NDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECILGPSTTTPT--PTTTPT-TPTT- 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----TEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYL------VCEFVNGGWW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1979 -----FDNKFYEKVTAFKAKG--IKVLIAIGGWNDSAGDKYSRLVNNPSSRRRFIAHVVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146 FLQEYKFDGLDLDWEYP----GSRLGNPKIDKONYLALVRELKDAFEPHGYLLTAAVSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GKDKIDRAYDIKELNKL FDWMNVMTYDYHGGWEN FYGHNAPLYKR PDETDELHTYFNVNY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
The Movel putative insect Chitinase with multiple catalytic domains:

the Chitinase Minimulation during metamorphosis.";

Bubmitted (MAY-2012) to the EMBL/GenBank/DDBJ databases.

Bubmitted (MAY-2012) to the EMBL/GenBank/DDBJ databases.

CO; GO:0005576; C:catracellular; IEA.

CO; GO:0008843; F:ndrin binding; IEA.

CO; GO:0008843; F:ndrin binding; IEA.

CO; GO:0016798; F:ndrin metabolism; IEA.

CO; GO:0005576; P:carbowydrate metabolism; IEA.

CO; GO:0005975; P:carbowydrate metabolism; IEA.

CO; GO:0005975; P:carbowydrate metabolism; IEA.

CO; GO:0005975; P:carbowydrate metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

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CO; CO:0005975; P:chitin metabolism; IEA.

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CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

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CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism; IEA.

CO; CO:0005975; P:chitin metabolism
      insect Chitinase with multiple catalytic domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 27.1%; Score 842; DB 5; Length 2838; Best Local Similarity 32.2%; Pred. No. 7.8e-44; Matches 198; Conservative 92; Mismatches 205; Indels 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL 1 20 2030 POTENTIAL.
CHAIN 21 2838 CHITINASE.
SEQUENCE 2838 AA; 321407 NW; 608B3F2A8E98B9B7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --TTPSPTTTP-SPTT-----PTTTPSPTTP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59 FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 ALVRELKDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWANVMTYDYHGGWENF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AYKGTQWVGYEDPRSVEIKVAWIKEKGYLGAMTWAIDMDDFKGLCGEENPLIKLLH----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       460 TITPSPTIPITPIPAPITSTPSPTTTEHTSETPKYTTYVDGHLIKCYKEGD-IPHPIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          227 ADVHSPLYKRPHD-QWAYEKLANVNDGLALWEEKGCPTNKLVVGIPFYGRSFTLSAGNNNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RITARPI--TITIKVPHGITEEDFDINVRPEVEEPPIENEVDNADV-CNSEDDYVPDKKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLGTYINKEAGGGDPAPYTNATGF -----WAYYEICTEVDADGSGWTKKWDEFGKCPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                               64;
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NCBI_TaxID=7067;
                                                                                                                                                                                                                                                                                                                                                                           Query Match
27.3%; Score 847; DB 5; Length 544;
Best Local Similarity 36.5%; Pred. No. 5.2e-45;
Matches 207; Conservative 78; Mismatches 218; Indels
          InterPro; IPR001223; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18AS.
Pfam; PF01607; CBM_14; 1.
Probom; PP000471; Glyco_hydro_18; 1.
Probom; PM00494; ChtBD2; 1.
SMART; SM00494; ChtBD2; 1.
SMART; SM00636; Glyco_18; 1.
SPORTT; PA01095; CHTTINASE_18; 1.
Glycosidase; Hydrolase.
SEQUENCE 544 AA; 61069 MW; 89872DFCIDA23753 CRC64;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CSKYWRC--VNGEGVQ--FSCQPGTIF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [1]
SEQUENCE FROM N.A.
Royer V., Fraichard S., Bouhin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       152 FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDI 211
     343 GYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      339 AYKGTQWVGYEDPRSVEIXMNWIXEKGYLGAMTWAIDMDDFKGLCGEENPLIKLLHKHMS
                                                                                                                                                                                                                              459 PTTTPSPTTPTTPTPAPTTSTPSPTTTE-----HTSBTPKYTTYVDGHLIKCYKE
                                                                                                                                                                                                                                                                                     445 TRITARPIT------TITIKVPHGTIEEDFDINVRPEVEELPT-ENEVDNADV-CNSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35 IVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQD--DNHNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 FDGLDMDWEYPTQRGGSPD-DYDNFAILMAELKQALQPEGMLLTAAVSAGKATIDPAYNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212 KELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRP-DETDELHTYFNVNYTMHYYLNNGA
                                                                                                               403 GDEKNSPECILGPSTITPTTTTTTTTTTTPTTTPSPTTPTT----TPSPTTPTTTPSPTT
                                                                                                                                                                      ------TYTVPPARTGHTTPTPEWARP-PSTPSDPSEGDPITTTTTVKPTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pjchi-3.
Penaeus japonicus (Kuruma prawm).
Penaeus japonicus (Kuruma prawm).
Penaeus japonicus (Kuruma prawm).
Bukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;
Eumalacostraca; Bucarida; Decapoda; Dendrobranchiata; Penaecidea;
Penaeidae; Marsupenaeus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SWART; SM00494; ChtBb2; T. SM0484; ChtBb2; T. SWART; SM00494; ChtBb2; T. SWART; SM00636; Glycolls; 1. SPCSITE; PS01095; CHITINSE 18; 1. SEQUENCE 467 AA; 51765 NW; 499F7095774CA445 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                511 GD-IPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIW 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27.0%; Score 837.5; DB 5;
34.8%; Pred. No. 1.7e-44;
ive 85; Mismatches 173;
                                                                                                                                                                                                                                                                                                                                                                                                  494 DDYVPDKKECSKYWRC--VNGEGVQ--FSCQPGTIF 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GO; GO:0005576; C:extracellular; IEA.
GO; GO:0008061; F:chitin binding; IEA.
GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
GO; GO:0006030; P:chitin metabolism; IEA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001279; Glyco.hydro_18.
Pfam; PF00704; Glyco_hydro_18; 1.
ProDom: PD000471; Glyco_hydro_18; 1.
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01-JAN-1998 (TrEMBLrel. 05,
01-OCT-2003 (TrEMBLrel. 25,
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Matches 183; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAMSIED---- 290
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                       Bombyx mori (Silk moth).
Bukaryota, Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidas; Bombyx.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52 DLCTHLIYSFIGVTEKSSEVLIIDPELD-----VDKSGFRNFTSLRSKHPDVKFMVAVGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286 GLGTYINKEAGGGDPAPYTNATGF-----WAYYEICTEVDADGSGWTKKWDEFGKCPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MRAIFATLAVLASCAALVQCADSR------ARIVCYFSNWAVYRPGVGRÝGIEDIPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Kinshu x Showa, TISSUB=Integument;
Abdel-Banat B.M.A., Koga D.;
"Alternative mRNA splicing generates heterogeneity within Bombyx mori
gene for chitinsse.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on glycosyl bonds; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.0%; Score 839; DB 5; Length 566; 35.9%; Pred. No. 1.7e-44; tive 78; Mismatches 209; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               566 AA; 63465 MW; 43FC717B3F6917D0 CRC64;
                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
CHITINASE.
                                                                                                                                                                                                    Created)
                                                                                                                                                                                     01-WAR-2002 (TrEMBLrel. 20, Create 01-WAR-2002 (TrEMBLrel. 20, Last 8 01-OCT-2003 (TrEMBLrel. 25, Last a chilinase precursor (EC 3.2.1.14).
2499 VLDGSTMTLKPHDSW 2513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity 35.9
Matches 207; Conservative
                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
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                                                                                                                                      Q8WR52
                                                                                                                                                                                                                                                                                                             CHIB4.
                                                                            RESULT 8

AC QBWR52

1D QBWR52

DD 10-M

DD 10-M

DD 10-M

DD 10-M

DD 01-M

CHILD 08 BOMD

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           342
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                                                                                                                   177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       444 TRÍTARPÍT------TÍTKVPHGÍTEBDFDINVRPEVEBLPT-ENEVDNADV-CNSE 492
FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta; Pterygota,
Neoptera; Endopterygota, Lepidoptera, Glossata, Ditrysia, Bombycoidea,
Bombycidae, Bombyx.
NCBI_TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 338 AYKGTQWVGYEDPRSVEIKMNMIKEKGYLGAMTWAIDMDDPKGLGGENPLIKLLHRHMS
                                        DICTHLIYSFIGVTEKSSEVLIIDPELD-----VDKSGFRNFTSLRSKHPDVKFMVAVGG
                                                                                                                      WYEGSEKYSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL
                                                                                                                                                                                                                                             ALVRELKDAR--BPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENF
                                                                                                                                                                                                                                                                            166 YFVQELKRAFIRAGRGWELTAAVPLANFRLMEGYHVPELCQELDAIHVMSYDLRGNWAGF
                                                                                                                                                                                                                                                                                                                                                                 236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                285 GLGTYINKEAGGGDPAPYTNATGP-----WAYYEICTEVDADGSGWTKKWDEFGKCPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  343 GYNDKIWYGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----THTVPPARTGHTTPTPEWARP-PSTPSDPSEGDP1PTTTTTTVKPTT
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Last annotation update)
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ID 09GV05
AC 09GV05;
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                                                                                                                                                      387
                                                                                                                                                                                        294 TVVDDPPAMHEPYAYYFPMINIWCSYDHAASVVTKAEYAKSKGLAGTMVWSVETDDFRGLC 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                           403
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Exbi, ABO52914 BAB2017.1, ...

R GO; GO:0008576; C:extracellular; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin metabolism; IEA.

R GO; GO:0006090; F:chitin metabolism; IEA.

DR GO; GO:0006090; F:chitin metabolism; IEA.

BR GO; GO:0006090; F:chitin metabolism; IEA.

DR HOROTOSES; Chitin bind Pera.

DR InterPro; IPR001223; Glyco_hydro_18.

DR Pfam; PF01607; CBM 14; 1.

DR Pfam; PF01607; CBM 14; 1.

DR ProDom; PF01607; CBM 14; 1.

DR RATT; SW00634; Glyco_hydro_18; 1.

DR SWART; SW00636; Glyco_18; 1.

DR RAST; SW00636; Glyco_18; 1.

DR ROSTIE; PS01095; CHITINASE 18; 1.

DR ROSTIE; PS01095; CHITINASE 18; 1.

DR ROSTIE; PS01095; CHITINASE 18; 1.

POTENWART; MW Glycosidase; Signal.

POTENWART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
                                                                    234. RPGQIALGIPLYGRCWTLASQOBTGYXAPAHQPGAAGDWTKSPGMLGYNBICYMQTTQDW
                                                                                                                                                                                                                                                                   GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTPTTTTTTTPTTTPTTTPSP
                                                                                                                                                                                                                                                                                                            H-----NRKYHLI----KTWVEVPGGSITEP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---IHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
                               TRDKLVMGVPPYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEW
                                                                                                                                                  HIOYDEYYNAPYGY -- - NDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC
                                                                                                                                                                                                                                                                                                                                                                                             TIPITIPSPITIPTTPSPITFIPTTPTPAPITSTPSPITTEHTSETFKYTTVDGHLIKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=Kinshu x Showa; TISSUE-Integument;
Abdel-Banat B.M., Koga D.;
"Molecular cloning of Bombyx mori chitinase cDNA: a unique insert of base pairs reduced the apparent molecular mass of the encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTLGLNPDPLDCTHYYLCSLNTSGGFDEKEBVCPEGTLFNPQSFYC 449
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    508 YKEGDIPHPINIHKYLVCEF-VNGGWWVHIMPCPPGIIWCQEKLTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     60971 MW; C36C71E3B84DF8F8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-WAR-2001 (TrEMBLrel. 16, Created)
01-WAR-2001 (TrEMBLrel. 16, Last sequence update)
01-00T-2003 (TrEMBLrel. 25, Last annotation update)
CHIB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78; Mismatches 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27.0%; Score 837.5; DB 5 35.9%; Pred. No. 2.1e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     543 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHITINAS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bombyx mori (Silk moth)
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                                                                                                                                                                                                                                                                                                                                                                                343 GYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN 402
                                                                                                                                                                                                                                                                                                                                                                                            GDEKNSFECILGPSTTTPTTTTPTTTPTTPSPTTPTT----TPSPTTPTTPSPTT 458
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                                                                                                                                                                                                         WYEGSEKYSDMAANPTYRQOFIQSYLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL 177
                                                                                                                                                                                                                       ------NYTVPPARTGHTTPTPEWARP-PSTPSDPSEGDPIFTTTTTTVKPTT 443
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01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Chitinase-like protein.
Bombyx mori (Silk moth).
Bukaryxt mori (Silk moth).
Bukaryxta, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota, Nooptera, Endopterygota, Lepidoptera, Glossata, Ditrysia, Bombycoidea,
                                                                                                                                                                                                                                                                                                                                      -----ESKIKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                              DLCTHLIYSFIGVTEKSSEVLIIDPELD-----UDKSGFRNPTSLRSKHPDVKFWVAVGG
                                                                                                                                                                                                                                                   ALVRELKDAF - - EPHGYLLTAAVSPGKOKIDRAYDIKELNKLFDWMNVMTYDYHGGWENF
                                                                                                                                                                                                                                                                1 MRAIFATLAVLASCAALVQ-----SDSRARIVCYFSNWAVYRPGVGRYGIEDIPV
                                                                                                                                                                 FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKOPBLTTMISLGG
                                                                                                                         MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDINE=99318808; PubMed=9654739; Kim S.C., Park H.Y.; Kim M.G., Shin S.W., Bae K.S., Kim S.C., Park H.Y.; Molecular cloning of chitinase cDNAs from the silkworm, Bombyx moriand the fall webworm, Hyphantria cunea."; Insect Biochem. Mol. Biol. 28:163-171(1998).
                                                                                                     83;
                                                                             Query Match
Best Local Similarity 35.9%; Pred. No. 2.1e-44;
Matches 207; Conservative 78; Mismatches 208; Indels 83
                                                  CHITINASE.; DE29675D83AEC2EF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                493 DDYVPDKKECSKYWRC--VNGEGVQ--FSCOPGTIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GD-IPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        565 AA
SMART; SW00636; Glyco 18; 1.
PROSITE; PS01095; CHITINASE 18; 1.
Glycosidase; Hydrolase; Signal.
20
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60982 MW;
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                                                   21 5
543 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      403 GDEKNSFECILGPSTTTPTTTTTTTTTTTPTTPSPTT----TPSPTTPTTTPSPTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119 WYEGSEKYSDMAANPTYRQOFIOSYLDFLOEYKFDGLDLDWEYPGSR-LGNPKIDKONYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 WABGGSKYSHMVAQKSTRMSFIRSVVDFLKKYDFDGLDLDWEYPGAADRGGSFSDKOKFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178 ALVRELKDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMVMTYDYHGGWENF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----RSKIKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 285 GLGTYINKEAGGGDPAPYTNATGF-----WAYYEICTEVDADGSGWTKKWDEFGKCPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 DLCTHLIYSFIGVTEKSSEVLIIDPELD-----UDKSGFRNFTSLKSKHPDVKFMVAVGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
R GO; GO:0005576; C:extracellular; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0005975; P:carbohydrate metabolism; IEA.

R GO; GO:0005975; P:carbohydrate metabolism; IEA.

R GO; GO:0006030; P:chitin metabolism; IEA.

R InterPro; IPR001257; Chitin bind_PerA.

R InterPro; IPR001257; Chitin bind_PerA.

R InterPro; IPR001257; Chitin bind_PerA.

R Propon; PR001679; Glyco_hydro_18.

R Pfam; PF00704; Glyco_hydro_18; 1.

R Probom; PD000471; Glyco_hydro_18; 1.

R SMART; SM006494; ChtBD2; 1.

R SMART; SM006494; ChtBD2; 1.

R PROSITE; PS01095; CHITINASE_18; 1.
                                                     IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83;
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Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 565;
                                                                                                                                                                                                                                                                                                                                                                                                                                        27.0%; Score 837.5; DB 5; Length 35.9%; Pred. No. 2.2e-44; ive 78; Mismatches 208; Indels
                                                                                                                                                                                                                                                                                                                                                                                           77D26D014875F3E2 CRC64;
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
CG9307 protein (LP08894P).
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                                                                                                                                                                                                                                                                                                                                                                                             565 AA; 63394 MW;
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Best Local Similarity 35.9
Matches 207, Conservative
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us-09-662-293-18.rspt

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EXPLAINLY ENCRY N.A.

RECULAINLY SECULOS PUBMED = 10731132;

RADDINES-2196006; Pubmed=10731132;

RADDINES-2196006; Pubmed=10731132;

RADDINES-2196006; Pubmed=10731132;

RADDINES-2196006; Mortman J. R., Tandard B., Amblunter M., Handarson S.N., Sutton G.G., Mortman J. R., Yandall M.D., Zanng Q., Chen L.X., Button G.G., Mortman J. R., Yandall M.D., Zanng G., Chen L.X., Baradon R.C., Rogers Y.H.C., Bazel R.G., Chendre M., Miklos G.L.G., Man K.H., Doyle C., Barter B.G., Helt G., Melson C.R., Miklos G.L.G., Abril J.F., Abdraws-Pfannkoch C., Baldwin D., Radlew M., Basu A., Barman B.P., Bandari D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bouck J., Broketen D., Botchan M.R., Bodeon K., Dong L.E., Commes M., Deng Z., Ganbart W.M., Glasser K., Roder C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K., Anger M. Gong F., Gorrell J.H., Gu Z., Gunn P., Harrey D., Harvey D., Heiman T.J., Hernandez J.R., Houck J., Lei Y., Leviteky A.A., Li J., Hernandez J.R., Houck J., Lei Y., Leviteky A.A., Li J., Li J., Hosten M.R., Mach M. Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Murphy B., Mu
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
A STRAIN=Berkeley;
A Carlson M., Barcketein P., Hong L., Agbayani A., Carlson J.,
A Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J.,
M. Winco J., Parleb J., Paragas V., Park S., Phouanenavong S., Wan K.,
Y. C., Lewis S.E., Rubin G.M., Celniker S.,
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
BREL; AE003701; DAFF4987.1; -.
BREL; AE003701; AAL29101.1; -.
BREL; AV061553; AAL29101.1; -.
BREL; AV061553; AAL29101.1; -.
BREL; AV061576; Ciextracellular; IEA.
GO, GO:0008061; F:chitin binding; IEA.
GO, GO:0008061; F:chitin binding; IEA.
BO, GO:0005075; P:carbohydrate metabolism; IEA.
BREPTO; PRE001223; Glyco_Hydro_18.
BREPTO; PRE001223; Glyco_Hydro_18.
BREPTO; DRE001579; AUC-1848.
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          595 AA; 67050 MW; 8DC8469D3F732593 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF01607; CBM 14; 1.
Pfam; PF00704; Glyco_hydro_18; 1.
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                                                                                                                                                                                           81
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MEDLINE-20196065, PubMed=10731132,
MEDLINE-20196065, PubMed=10731132,
Manatides P.G., Scherer S.E., Holt R.A., Hoskins R.A., Galle R.F.,
Manatides P.G., Scherer S.E., II P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abrill J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
                                                                                                                                                                                                                                                     88 NHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFL
                                                                                                                                                                                                                                                                                                                                                                            148 QEYKFDGLDLDWEYPGS--RLGNPKIDKQNYLALVRELKDAF--EPHGYLLTAAVSPGKD
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                                                                                                                          29 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDD
                                                                                                                                                             Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Boptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
Length 595;
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Last sequence update)
Last annotation update)
      27.0%; Score 837.5; DB 5; 35.2%; Pred. No. 2.3e-44; ive 84; Mismatches 199;
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                                                                   Matches 201; Conservative
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SEQUENCE FROM N.A.
                                         Similarity
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         Query Match
Best Local
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Q9W2M7
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136 RQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLT 195
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26.8%; Score 832; DB 5; Length 460;
Best Local Similarity 33.7%; Pred. No. 3.7e-44;
Matches 183; Conservative 87; Mismatches 175; Indels 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        460 AA; 51055 MW; BEF4F126F1DD8D9B CRC64;
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--KCAYDRFTALKQQNANLKAILAVGGWNEGSPKYSKWAADPVLRNRFITSSIELLKKHG 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       211
                                                                                                                                                                                                                                                                                                                                                                                                                      ETPK--YTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEK 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         400 ESPSEGFSCPADA-----PAGYIRDPDNCSKFYYC----SGGKTHNFDCPSGLNFDLDT 449
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235 QQQLNVDAVVKYWLKAGAPAEKLILGVPFYGRSFTLATAEGNQPGAPHIGKGIAGNYSRE 294
                                                                                EGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSG 372
                                                                                                                                      295 PGVLGYNELCEMMEREEWTQKWEATQQVPYAYRQRQWVGYEDPRSLALKAQYVMDNHLGG 354
                                                                                                                                                                                               373 VMVWSLENDDFKGHCGPK-NPLLNKVHNMINGDEKNSFECILGPSTTTPTPTTTTTTTTT 431
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"Cloning and characterization of a cDNA encoding a chitinase from heperopancreas of the Penaeus vanameil (Grustacea, Decapoda).";

"Cloning and characterization of a cDNA encoding a chitinase from the peropancreas of the Penaeus vanameil (Grustacea, Decapoda).";

"Submitted (OCT-2000) to the EMEL/GenBank/DDBJ databases.

"EMBL, AF315689; AAN74647.1; -..

"GO, 60:0005576; Crextracellular; IEA.

"GO, 60:000577; Printin binding, IEA.

"GO, 60:000577; Printin binding, IEA.

"GO, 60:000577; Printin metabolism; IEA.

"GO, 60:000577; Printin metabolism; IEA.

"GO, 60:000637; Printin metabolism; IEA.

"GO, 60:000637; Printin metabolism; IEA.

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"GO, 60:000637; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; IEA.

"GO, 60:0006097; Printin metabolism; 
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Eukaryota, Metazoa, Arthropoda, Crustacea, Malacostraca,
Eumalacostraca, Eucarida, Decapoda, Dendrobranchiata, Penaeoidea,
Penaeidae, Litopenaeus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85;
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01-WAR-2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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llarity 34.2%; Pred. No. 4.1e-44;
Conservative 87; Mismatches 174;
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                                                                                                                                                                                                                                                                                                                                                                           388 -----
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March 22, 2004, 06:59:34; Search time 4.09116 Seconds (without alignments) 1265.926 Million cell updates/sec 1049977 GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd. Total number of hits satisfying chosen parameters: 1049977 segs, 258955339 residues Published Applications AA:* Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries - protein search, using sw model US-09-662-293-13 105 1 DPAKGMSPPGFIVGEEGVLS 20 BLOSUM62 Gapop 10.0 , Gapext 0.5 Minimum DB seq length: 0 Maximum DB seq length: 200000000 Title: Perfect score: Sequence: Scoring table: OM protein Database : Searched: Run on:

:: run118Hea Applications Aa: cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*

cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

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14: cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

15: cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

16: cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

17: cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

16: cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

17: cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

18: cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

18: cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Sequence 4, Appli	Sequence 13, Appl	Sequence 41, Appl	Sequence 35, Appl	Sequence 38, Appl	Sequence 21, Appl	Sequence 15, Appl	Sequence 18, Appl	Sequence 238601,	Sequence 181344,	Sequence 483, App	Sequence 6, Appli	Sequence 6, Appli	Sequence 6, Appli	Sequence 2, Appli
ΔΙ	US-10-218-743-4	US-10-218-743-13	US-10-218-743-41	US-10-218-743-35	US-10-218-743-38	US-10-218-743-21	US-10-218-743-15	US-10-218-743-18	US-10-424-599-238601	US-10-424-599-181344	US-09-925-302-483	US-10-067-615-6	US-10-076-754-6	US-10-076-773-6	US-08-916-625B-2
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US-09-828-739-2	-09-757	-09-874-13	US-09-887-879-11	-09-811-088	9	₽	US-10-039-785-	US-10-005-84	US-10-067-615-	US-10-052-7	US-10-076-7	US-10-076-77	US-10-207-65	US-10-314-4	US-10-242-38	US-10-2	US-10-322-67		US-10-292-48	US-10-333-712	US-10-42	4	US-09-811-088-4	US-10-314-410-	D	US-10-424-599-16974	US-10-424-599-26	US-10-425-114-5729	US-09-738-626-6409
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45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	43.8	43.8	42.9	42.9
4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	46	46	45	45
16	17	8	16	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	.36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

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Sequence 4, Application US/10218743

Publication Wo. US20030096779A1

Publication Wo. US2030096779A1

APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Exic R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, FROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, FROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, FROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, FROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, FROTEINS

FRIOR APPLICATION NUMBER: US/09/292,225

PRIOR APPLICATION NUMBER: 60/098,909

PRIOR FILING DATE: 1998-09-02

PRIOR APPLICATION NUMBER: 60/098,565

PRIOR FILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 60/062,013

PRIOR APPLICATION NUMBER: 60/062,013

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Query Match
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Sequence 41, Application US/10218743

Publication No. US20030096779A1

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: Worker Shirley Wu
APPLICANT: Wober, Eric R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE REPERENCE: AL-2-C3

CURRENT PELLING DATE: 200-08-13

PRIOR APPLICATION NUMBER: US/09/292,225

PRIOR APPLICATION NUMBER: 60/098,909

PRIOR PILING DATE: 1998-04-15

PRIOR PILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

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SEQUENCE 13. Application US/10218743

SEQUENCE 13. Application US/10218743

SUBLICATION NO. US203009677941

GENERAL INFORMATION:

APPLICANT: MCDET, Catherine A.

APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Eric R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES,
FILE REFERENCE: AL-2-C3

CURRENT APPLICANTON NUMBER: US/09/292,225

PRIOR APPLICATION NUMBER: US/09/292,225

PRIOR FILING DATE: 1998-04-15

PRIOR FILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

PRIOR PRILING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 60/098,565

PRIOR PRILING DATE: 1998-04-17

PRIOR PRILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE PALENTIN VET: 2.0

LENGTH: 20
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ORGANISM: Dermatophagoides farinae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Dermatophagoides farinae
US-10-218-743-13
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US-10-218-743-41
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LENGTH: 490
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### Bear Local Smilatity 95.0%; Pecch No. 9.44-07.

### Bear Local Smilatity 95.0%; Pecch No. 9.44-07.

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### Bear Local Smilatity 95.0%; Pecch No. 9.44-07.

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### Bear Local Smilatity 95.0%; Pecch No. 9.44-07.

### Bear Local Smilatity 95.0%; Pecch No. 9.90

### Bear Market 1998-09-02

### Bear Market 1998-09-02

### Bear Market 1998-09-03

### Bear Market 1998-09-03

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APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Zhou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL TATLES

Sequence 18, Application US/10218743

Sequence 18, Application US/10218743

Publication No. US2003009677941

GENERAL INFORMATION:

APPLICANT: HUREL SAITLEY WU

APPLICANT: HUREL SAITLEY WU

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE REFERENCE: AL-2-C3

CURRENT FILING DATE: 2022-08-13

CURRENT APPLICATION NUMBER: US/10/218,743

CURRENT FILING DATE: 1999-04-15

PRIOR FILING DATE: 1999-06-15

PRIOR FILING DATE: 1998-06-02

PRIOR PLICATION NUMBER: 60/098,295

PRIOR PLICATION NUMBER: 60/098,565

PRIOR FILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

PRIOR FILING DATE: 1998-04-17

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Pred. No. 2.1e-06;
0; Mismatches 1;
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Pred. No. 2.1e-06;
0; Mismatches 1
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PRIOR APPLICATION NUMBER: 60/085,295
PRIOR FILING DATE: 1998-05-13
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR PILING DATE: 1998-04-17
PRIOR FILING DATE: 1998-04-17
PRIOR FILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 15
LENGTH: 555
LENGTH: 555
TYPE: PRT
TYPE: PRT
CAGANISM: Dermatophagoides farinae
US-10-218-743-15
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ilarity 95.0%;
Conservative
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Best Local Similarity 95.0%;
Matches 19; Conservative
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Matches 19; Conserva'
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gequence 21, Application US/10218743

publication No. US20030096779A1

genence 21, Application No. US20030096779A1

general information:

APPLICANT: Mcdall, Catherine A.

APPLICANT: Mcdall, Catherine A.

APPLICANT: Mcdall, Catherine A.

TITLE OF INVENTION: DAID DERWATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE OF INVENTION: NOVEL DERWATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

FILE OF INVENTION: AND USES THEREOF

FILE OF INVENTION: ADD USES THEREOF

FILE OF INVENTION: DATE: 1090-04-15

PRIOR PELING DATE: 1999-04-15

PRIOR PILING DATE: 1998-05-13

PRIOR FILING DATE: 1998-04-17

PRIOR PILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SEQ ID NO 2:

LENGTH E. SS6

MANDER DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DA
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| Sequence 15. Application US/2030096779A1
| Publication No. US20030096779A1
| GENERAL INFORMATION:
| APPLICANT: McCall, Catherine A. |
| APPLICANT: Weber, Exic R. |
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS |
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS |
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS |
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS |
| FILE REFERENCE: AL. 2-C3 |
| CURRENT APPLICATION NUMBER: US/10/292,225 |
| PRIOR PILING DATE: 1999-04-15 |
| PRIOR FILING DATE: 1999-09-02 |
| PRIOR FILING DATE: 1998-09-02
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Pred. No. 2.1e-06;
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; ORGANISM: Dermatophagoides farinae
US-10-218-743-21
                                                                                                                         TYPE: PRT ; ORGANISM: Dermatophagoides farinae US-10-218-743-38
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Best Local Similarity 95.0%;
Matches 19; Conservative
           SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 38
LENGTH: 509
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Matches 19; Conserva
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US-10-218-743-15
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GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Alnemri, Emad S.
TITLE OF INVENTION: NOVEL TRAIL RECEPTORS, NUCLEIC ACIDS ENCODING SAME, AND TITLE OF INVENTION: METHODS OF USE THEREOF;
FILE REPERENCE: 480140.432D1
CURRENT APPLICATION NUMBER: US/10/067,615
CURRENT PILING DATE: 202-02-04
NUMBER OF SEQ ID NOS: 6
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 6
LENGTH . . . .
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TITLE OF INVENTION: NOVEL TRAIL RECEPTORS, NUCLEIC ACIDS ENCODING SAME, AND
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REPERBUCE: 480140.432D3
CURRENT APPLICATION NUMBER: US/10/076,754
CURRENT FILING DATE: 2002-02-12
NUMBER OF SEQ ID NOS: 6
SOFTWARE: Patentin Ver. 2.0
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43.8%; Pred. No. 55;
Live 5; Mismatches 4; Indels
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Pred. No. 55;
                                                                          Score 48; DB 9; Length 57;
Pred. No. 7.8;
4; Mismatches 2; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Sequence 6, Application US/10076754; Publication No. US20020161195A1; GENERAL INFORMATION:
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76 PSEGLCPPGHHISEDG 91
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                                                                                      Query Match
Best Local Similarity 57.1%;
Matches 8; Conservative
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Best Local Similarity 43.8<sup>3</sup>
Matches 7; Conservative
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ORGANISM: Homo sapiens
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-067-615-6
; ORGANISM: Homo sapiens
US-09-925-302-483
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Best Local Similarity
Matches 7; Conserva
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US-10-076-754-6
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Publication No. US20040031072A1
GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5322)B
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 181344
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TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 36-21(53223)B CURRENT APPLICATION NUMBER: US/10/424,599 CURRENT FILING DATE: 2003-04-28 NUMBER OF SEQ ID NOS: 285684 SEQ ID NO 238601
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| Sequence 483 Application US/09925302
| Patent No. US20020044941A1
| GENERAL INFORMATION:
| APPLICANT: ROSEON et al. |
| TILLS OF INVENTION: Nucleic Acids, Proteins and Antibodies
| FILE REFERENCE: PA104
| CURRENT APPLICATION NUMBER: US/09/925,302
| CURRENT PILING DATE: 2001-08-10
| PRIOR PILING DATE: 2001-08-10
| PRIOR FILING DATE: 1999-03-12
| NUMBER OF SEQ ID NOS: 896
| SOFTWARE: PatentIn Ver. 2.0
| SEQ ID NO 483
| INVENTIOR IN TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF TABLES OF T
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Pred. No. 11;
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Pred. No. 6.8;
2; Mismatches 1; Indels
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US-10-424-599-238601
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Best Local Similarity 61.1%;
Matches 11; Conservative
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Best Local Similarity 72.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31 PKRGVSPPGFI 41
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT ORGANISM: Glycine max
                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Glycine max
FEATURE:
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US-10-424-599-181344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-424-599-181344
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APPLICATION: Aliment, Emer Asi, Trill and PRINCE ACTOR ENCODING SAME, AND TITLES OF INVENTION: WATERTONS OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE THEREOF PRINCES OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF USE OF US
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Score 48; DB 8; Length 411; Pred. No. 65;

45.7%;

Query Match Best Local Similarity

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Matches 7; Conservative 5; Mismatches 4; Indels 0; Gaps
Qy 2 PAKGMSPPGFIVGEEG 17

Qy 2 PAKGMSPPGFIVGEEG 17

Db 76 PSEGLCPPGHISEDG 91

Search completed: March 22, 2004, 07:45:49

Job time: 4.09116 secs
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March 22, 2004, 06:42:54 ; Search time 1.61201 Seconds (without alignments) 640.518 Million cell updates/sec
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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                                                                        - protein search, using sw model
                                                                                                                                                                                  US-09-662-293-13
105
1 DPAKGMSPPGFIVGEEGVLS 20
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Gapop 10.0 , Gapext 0.5
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Perfect score:
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                                                                           OM protein
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                                                                                                                                                                                                                          Sequence:
                                                                                                              Run on:
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Issued Patents AA:* Database :

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

1: /cgn2 6/ptodata/2/iaa/5A COMB.pep:*
2: /cgn2 6/ptodata/2/iaa/5B COMB.pep:*
3: /cgn2 6/ptodata/2/iaa/6A COMB.pep:*
4: /cgn2 6/ptodata/2/iaa/6B COMB.pep:*
5: /cgn2 6/ptodata/2/iaa/PCTUS COMB.pep:*
6: /cgn2 6/ptodata/2/iaa/PCTUS COMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description
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. BD
Length
% Query Match
* S &
Score
Result No.

		w	115		5, Ag			554	ence 3, Appli	'n	544	ence 6, Appl:		equence 26412,	equence 53, App.		216
Seguence	Sequence	Seguence	Seguence	Sedne	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Seque	Seque	Sequence	Sequence
19-252-991	US-09-711-164-349	US-09-543-681A-5516	US-09-489-039A-11591	US-08-821-119-17	US-08-821-118-5	US-09-198-452A-458	US-09-252-991A-17298	US-09-328-352-5542	US-08-459-146-3	US-08-459-065-3	US-09-543-681A-5442	US-09-043-627-6	US-09-252-991A-32847	US-09-252-991A-26412	US-08-401-512-53	US-09-107-532A-6265	US-09-252-991A-21650
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41	41	41	41	41	41	41	41	41	41	41	40.5	40.5	40.5	40.5	40	40	40
œ	59	30		32	33	34	35	36	37	38	33	40	41	42	43	44	45

ALIGNMENTS

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US-US-SECTED-4

US-US-SECTED-4

Sequence 4, Application US/0929225

Patent No. 645566

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Macall, Catherine A.
APPLICANT: Maber, Exic R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT PAPLICATION NUMBER: 60/098,909
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 09/662,013
EARLIER PILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49

SOFTWARE: PatentIn Ver. 2.0

LENGTH 20
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Patent No. 6455686
GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Muter, Shirley Wu
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REPERENCE: AL.2-C3
CURRENT APPLICATION NUMBER: US/09/292,225
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Best Local Similarity 100.0%; Pred. No. 1.6e-10; Matches 20; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) ORGANISM: Dermatophagoides farinae US-09-292-225-4
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JS-09-292-225-4
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TITLE OF INVENTION: AND USES THEREOF
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Matches 19; Conserv
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Matches 19; Conserv
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US-09-292-225-21
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US-09-292-225-41
Sequence 41, Application US/0929225
Sequence 41, Application US/0929225
Sequence 41, Application US/0929225
Sequence 41, Application General
APPLICANT: McCall, Catherine A.
APPLICANT: Whose Invention: Move Dermanophagoides Nucleic Acid Molecules, Proteins
TITLE OF INVENTION: AND USES THEREOF
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NUMBER: US/09/292,225
CURRENT APPLICATION NUMBER: US/099,909
EARLIER APPLICATION NUMBER: 00/099,909
EARLIER APPLICATION NUMBER: 00/099,909
EARLIER APPLICATION NUMBER: 00/099,565
EARLIER PILING DATE: 1998-04-17
SEARLIER FILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SEGURANCE PATEUR OF NOS: 49
SEGURANCE PATEUR OF NOS: 49
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.0%; Score 105; DB 4; Length 20; Best Local Similarity 100.0%; Pred. No. 1.6e-10; Matches 20; Conservative 0; Mismatches 0; Indels
                          EARLIER APPLICATION NUMBER: 60/098,909
EARLIER FILING DATE: 1998-09-02
EARLIER FILING DATE: 1998-09-02
EARLIER FILING DATE: 1998-09-13
EARLIER FILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SEQ ID NO 13
LENGTH: 20
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Sequence 35, Application US/09292225;
Patent No. 6455686;
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Dermatophagoides farinae
                                                                                                                                                                                                                                                                                                                                               TYPE: PRT; ORGANISM: Dermatophagoides farinae US-09-292-225-13
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             FILING DATE: 1999-04-15
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LENGTH: 490
TYPE: PRT
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APPLICANT: Weber, Eric R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT APPLICATION NUMBER: US/09/292,225
CURRENT FILING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098,909
EARLIER APPLICATION NUMBER: 60/098,295
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER PILING DATE: 1998-04-17
SARLIER PILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: PATEMENT VOY: 2.0
SEQ ID NO 38
LENGTH: 509
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 509;
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Pred. No. 2.8e-08;
FILE KEKEKANERS. AU.-U.S
CURRENT PELING DATE: 1999-04-15
CURRENT FILING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098,909
EARLIER PILING TATE: 1998-09-02
EARLIER PILING TATE: 1998-09-02
EARLIER PILING DATE: 1998-09-13
EARLIER PILING DATE: 1998-06-13
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER PILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SEQ ID NO 35
LENGTH: 509
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APPLICANT: McCall, Catherine A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 38, Application US/0929225
Patent No. 645568
GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Eric R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT ORGANISM: Dermatophagoides farinae
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US-09-292-225-35
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1 Similarity 95.0%;
19; Conservative
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GARREAL INFORMATION:

APPLICANT: McCall.

APPLICANT: McCall.

APPLICANT: McCall.

APPLICANT: McCall.

APPLICANT: Waber.

APPLICANT: Waber.

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APPLICANT: Waber.

AND STREAM AND USES THEREOF

FILIS REFERENCE: AL-2-3

CURRENT PAPLICANTON NUMBER: 60/098,909

EARLIER APPLICANTON NUMBER: 60/098,565

EARLIER APPLICANTON NUMBER: 60/098,565

EARLIER PILING DATE: 1998-06-13

EARLIER PILING DATE: 1998-04-17

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER APPLICATION NUMBER: 09/062,013

EARLIER APPLICATION NUMBER: 09/062,013

EARLIER APPLICATION NUMBER: 09/062,013

EARLIER APPLICATION NUMBER: 09/062,013

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EARLIER APPLICATION NUMBER: 09/062,013

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EARLIER APPLICATION NUMBER: 09/062,013

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EARLIER APPLICATION NUMBER: 09/062,013

EARLIER APPLICATION NUMBER: 09/062,013
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Sequence 6, Application US/09134618
Patent No. 6417328
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: NOVEL TRAIL RECEPTORS, NUCLEIC ACIDS ENCODING SAME, AND TITLE OF INVENTION: METHODS OF USE THEREOF FILE REPRENCE: 480140.432
CURRENT APPLICATION NUMBER: US/09/134,618
CURRENT PILING DATE: 1998-08-14
NUMBER OF SEQ ID NOS: 6
SOFTWARR: PATENTIN Ver. 2.0
SEQ ID NO 6:
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APPLICANT: Chuntharapai, Anan
APPLICANT: Kim, K. Jim
TITLE OF INVENTION: METHOD FOR MAKING MONOCLONAL ANTIBODIES AND
TITLE OF INVENTION: CROSS-REACTIVE ANTIBODIES OF THE METHOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
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Pred. No. 6.7;
5; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
94.3%; Score 99; DB 4; Length 555;
Best Local Similarity 95.0%; Pred. No. 6.6e-08;
Matches 19; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/09329633A Patent No. 6252050 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT; ORGANISM: Dermatophagoides farinae US-09-292-225-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            298 DPAKGMSPPGFISGEEGVLS 317
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Best Local Similarity 43.0.
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CRGANISM: Homo sapiens
US-09-134-618-6
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US-09-29-225-15

Sequence 15, Application US/0929225

Patent No. 6455686

GENERAL INFORMATION:

APPLICANT: Macall, Catherine A.

APPLICANT: Macall, Catherine A.

APPLICANT: Macall, Catherine A.

APPLICANT: Maber, Exic R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TATLIER APPLICATION NUMBER: 06/098,909

EARLIER FILING DATE: 1998-09-13

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

SEQ ID NO 15

LENGTH: 555

TAYDE: DATE

TATLIER DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TATLIER FILING DATE: 1998-04-17

SEQ ID NO 15

LENGTH: 555

TAYDE: DATE

TATLIER DERMATOR NOVEL SEQ ID NO 15

LENGTH: 555

TAYDE: DATE
          APPLICANT: Meber, Enc. 8.

APPLICANT: Weber, Eric R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT APPLICATION NUMBER: US/09/292,225
CURRENT FILING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098,909
EARLIER FILING DATE: 1998-05-02
EARLIER FILING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 60/098,565
EARLIER APPLICATION NUMBER: 09/062,013
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: PATENTING DATE: 1998-04-17
ILENGTH: 536
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Pred. No. 6.6e-08;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 94.3%; Score 99; DB 4; Length 536; Best Local Similarity 95.0%; Pred. No. 6.3e-08; Matches 19; Conservative 0; Mismatches 1; Indels
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US-09-292-225-18
; Sequence 18, Application US/09292225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: PRT
; ORGANISM: Dermatophagoides farinae
US-09-292-225-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279 DPAKGMSPPGFISGEEGVLS 298
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US-09-292-225-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298 DPAKGMSPPGFISGEEGVLS 317
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Best Local Similarity 95.0%;
Matches 19; Conservative
Hunter, Shirley Wu
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Sequence 2, Application US/09134618

Factoric 2, Application US/09134618

GENERAL INFORMATION:
APPLICANT: ALDIGATION:
APPLICANT: ALDIGATION:
TITLE OF INVENTION: NOVEL TRAIL RECEPTORS, NUCLEIC ACIDS ENCODING SAME, AND TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REPRESENCE: 48040.432
CURRENT APPLICATION NUMBER: US/09/134,618
CURRENT FILING DATE: 1998-08-14
NUMBER OF SEQ ID NOS: 6
SOFTWARE: Patentin Ver. 2.0
INSTANT: Patentin Ver. 2.0
SOFTWARE: Patentin Ver. 2.0
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WESULT IN 0. 653 8938

j Patent No. 653 8938

j Patent No. 653 8938

j Patent No. 653 8938

j Patent No. 653 8938

j Patent No. 653 8938

j TITLE OF INVENTION: Antibodies that Immunospecifically Bind to TRAIL

j TITLE OF INVENTION: Receptors

FILE REFERENCE: PFS50

CURRENT APPLICATION NUMBER: 60/36, 860

PRIOR APPLICATION NUMBER: 60/341, 237

PRIOR APPLICATION NUMBER: 60/341, 237

PRIOR APPLICATION NUMBER: 60/331, 310

PRIOR PILING DATE: 2001-10-4

PRIOR PILING DATE: 2001-11-4

PRIOR APPLICATION NUMBER: 60/331, 304

PRIOR PILING DATE: 2001-10-09

PRIOR PILING DATE: 2001-10-09

PRIOR PILING DATE: 2001-00-01

PRIOR PILING DATE: 2001-00-01

PRIOR PILING DATE: 2001-00-01

PRIOR PILING DATE: 2001-00-01

PRIOR PILING DATE: 2001-06-04

PRIOR PILING DATE: 2001-06-04

PRIOR PILING DATE: 2001-06-04

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PRIOR PILING DATE: 2001-06-05

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43.8%; Pred. No. 8;
tive 5; Mismatches 4; Indels
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43.8%; Pred. No. 8;
ive 5; Mismatches 4; Indels
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76 PSEGLCPPGHHISEDG 91
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Best Local Similarity 43.8
Matches 7; Conservative
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Best Local Similarity 43.8
Matches 7; Conservative
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US-10-039-785-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-134-618-2
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Best Local Similarity 43.8%; Pred. No. 8;
Matches 7; Conservative 5; Mismatches 4; Indels
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COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/079,029
FILING DATE:
FILE REFERENCE: P1468R1 (REVISED)
CURRENT APPLICATION NUMBER: US/09/329,633A
CURRENT FILING DATE: 1999-06-10
FRIOR APPLICATION NUMBER: US 60/089,253
FRIOR FILING DATE: 1998-06-12
NUMBER OF SEQ ID NOS: 2
SEQ ID NO 2
SEQ ID NO 2
TENGTH: 411
TYPE: PRT
ORGANISM: human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/09079029; Patent No. 6342369; GENERAL INFORMATION: APPLICANT: Adams, Camilia W. APPLICANT: Ashkenazi, Avi J. APPLICANT: Chuntharapai, Anan APPLICANT: Chuntharapai, Anan APPLICANT: Chuntharapai, Anan APPLICANT: Kim, Kyung J. TITLE OF INVENTION: Apo-2 Receptor NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: xaa
LOCATION: 410
CTHER INFORMATION: xaa = leu oz met
US-09-329-633A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Marschang, Diane L.
REGISTRATION NUMBER: 35,600
REFRENCE/DOCKET NUMBER: P110
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-5416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Genentech, Inc. STREET: 1 DNA Way CITY: South San Francisco STATE: California COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 PAKGMSPPGFIVGEEG 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |::|:|| : |:|
76 PSEGLCPPGHHISEDG 91
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Amino Acid
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Best Local Similarity 43.8°
Matches 7; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
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US-09-079-029-1
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Gaps

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76 PSEGLCPPGHHISEDG 91

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                                                                                                    GREERAL INFURGATION:
GREERAL INFURGATION:
GREERAL SEER, KEITH C.
APPLICANT: MASCHALL, LISA A.
APPLICANT: ROSHAK, AMY K.
APPLICANT: ROSHAK, AMY K.
APPLICANT: TAM, KONG B.
APPLICANT: TRINEH, ALEMBEGED
TITLE OF INVENTION: THOR NECROSIS FACTOR RELATED RECEPTOR,
TITLE OF INVENTION: TROSHAK.
FILE REFERENCE: GH-50008-2
CURRENT FILING DATE: 1999-06-15
PRIOR APPLICATION NUMBER: 08/916,625
PRIOR APPLICATION NUMBER: 08/916,625
PRIOR APPLICATION NUMBER: 08/916,625
PRIOR FILING DATE: 1997-08-09
PRIOR FILING DATE: 1997-03-14
PRIOR FILING DATE: 1997-03-14
NUMBER OF SEQ ID NOS: 8
SOFTWARE: FASTSEQ FOR Windows Version 3.0
: LENGTH: 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: DEEN, KEITH C.
APPLICANT: DEEN, KEITH C.
APPLICANT: DOUNG, PETER R.
APPLICANT: MARSHALL, LISA A.
APPLICANT: MARSHALL, LISA A.
APPLICANT: RAN, KOWG B.
APPLICANT: TAM, KOWG B.
APPLICANT: TRUNEH, ALEMSEGED
TITLE OF INVENTION: TWO NUMBER: US/09/333,593A
TITLE OF INVENTION: TR6
FILE REFERENCE: GH-5008-2
CURRENT APPLICATION NUMBER: 08/06-15
FILE REFERENCE: GH-5008-2
CURRENT APPLICATION NUMBER: 08/16,625
PRIOR APPLICATION NUMBER: 08/06-15
PRIOR APPLICATION NUMBER: 06/041,230
PRIOR FILING DATE: 1997-03-14
PRIOR FILING DATE: 1997-03-14
NUMBER OF SEQ ID NOS: 8
SOFWWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 8
LENGTH 424
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 8, Application US/09333593A Patent No. 6313269 GENERAL INFORMATION:
                                       ; Sequence 2, Application US/09333593A; Patent No. 6313269; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 PAKGMSPPGFIVGEEG 17
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76 PSEGLCPPGHHISEDG 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 43.8
Matches 7; Conservative
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CORGANISM: HOMO SAPIENS
US-09-333-593A-2
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CORGANISM: HOMO SAPIENS
US-09-333-593A-8
RESULT 14
US-09-333-593A-2
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45.7%; Score 48; DB 4; Length 424;

Query Match

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Best Local Similarity 43.8%; Pred. No. 8.3;

Matches 7; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 2 PAKGMSPPGFIVGEEG 17

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Db 76 PSEGLCPPGHHISEDG 91

Search completed: March 22, 2004, 07:03:57

Job time: 1.61201 secs
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on:

March 22, 2004, 06:40:28; Search time 36.0951 Seconds (without alignments) 1479.047 Million cell updates/sec

US-09-662-293-15 3107 1 MKTIYAILSIMACIGLMNAS.....IMPCPPGTIWQQEKLTCIGE 555 Title: Perfect score: Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

283366 Total number of hits satisfying chosen parameters:

283366 segs, 96191526 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

SUMMAKLES	D Descrip		445 Chitinase (EC 3.	14075 chitinase (EC 3.	chitinase (EC	chitinase (EC 3.	hypothetica		estrogen dependen								chitinase	chitinase A [i	chitinase	ŭ	chitinase (E	chitinase VCA002	T03884 hypothetical prote	551 chitinase	152	975 chitinase	chitinase I	351369 chitinase - fungus	B1088 chitinase B	
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47K glycoprotein p hypothetical prote	chitinase (EC 3.2. chitinase (EC 3.2.	chitinase (BC 3.2.		chitinase - Strept	chitinase (EC 3.2.	chitinase homolog	probable chitinase	probable membrane	chitinase homolog	chitinase chi-A or	chitinase - Autogr	<u>ы</u>
JC4038 T24898	T30418 S47133	A40633 PC4106	T20950	35719	110393	04761	82246	161166	T04762	T41863	372865	JC4565
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452 633	558 424	820	755	765	550	398	1088	511	379	552	551	427
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394 44	391,5	(4) (7)		w	'n	m		m		ñ	m	ñ

ALIGNMENTS

C; Secrets: Anopherse gambles (African malaria mosquitc) C; Jate: 21-Jan-2000 #geogence_revision 21-Jan-2000 #text_change 21-Jan-2000 C; Jate: 21-Jan-2000 #geogence_revision 21-Jan-2000 #text_change 21-Jan-2000 R; Shen, Z: Jacobes_Loren, M. Swhen, Z: Jacobes_Loren, M. A; Reference number: 22271 A; Reference number: 22271 A; Reference number: 22271 A; Rocentice: 1525 *RBE: AP008575; PIDN: AB897764.1 A; Rocentice: 1525 *RBE: AP008575; PIDN: AB897764.1 A; Reference: adult; gut C; Genetice: ch-1 C
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gut chitina

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242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              414 APTT----STVAPGTTTTTPTGANPGTTQPPT--SDAPNHTTTTTTEGNPGTTRPPSG 466
                                   532
                                                          500
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A, Cross-references: EMBL:AF026492; NID:g2564720; FID:g2564721; PIDN:AAB81850.1
                                                                                                                                                                                                                                                                                                                                                                                                                                        : |: | : : | | : : | | | : | DRLVIK.------PHDSWADIDNRFYERVVEYKKKGKKVT--VAIGGWNDSAGDKYSRL 759
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            306 PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAF 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LKELGVSGVMVWSLENDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECIL--GPSTTTPT 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74 YKYTIQVFDPYQDDNHNSW---EKRGYERFNNLRLKNPELITMISLGGWYEGS-EKYSDM 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     130 AANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPK----IDKQNYLALVRELKD 185
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                                                                                                                                                PSPTTTEHTSETPKY------TTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGW
                                                                                                                                                                                                                                                                                                                                                                                                                          21 IKRDHNDYSKNPM-----RIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDE
                                   TTTEHTSETPKYTTYVDGHLIKCY - - KEGDIPHPTNIHKYLVC - - - - - - EFVNGGWWVH
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C;Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                           28.0%; Score 869; DB 2; Length 16
34.3%; Pred. No. 4.8e-46;
ive 95; Mismatches 196; Indels
                                                                                                                                                                                                                                                          A,Accession: T14075
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Molecule type: DNA
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                                                                                              ---CPPGTLF 507
                                                                                 536 IMPCPPGTIW 545
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C;Species Manduca sexta (tobacco hornworm)
C;Date: 11-Aug-1995 #sequence_revision 11-Aug-1995 #text_change 29-Jan-1999
C;Accession: A56596
R;Kramer, K.J.; Corpuz, L.; Choi, H.K.; Muthukrishnan, S.
Insect Biochem, Mol. Biol. 23, 691-701, 1993
A,Title: Sequence of a cDNA and expression of the gene encoding epidermal and A;Reference number: A56596; MJID:93357793; PMID:8353525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WYGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
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chitinase (EC 3.2.1.14) precursor - braconid wasp (Chelonus sp.)
C;Species: Chelonus sp.
C;Species: 28-Jul-1995 #sequence_revision 28-Jul-1995 #text_change 21-Jul-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184 KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A,Experimental source: larvae
A,Note: sequence extracted from NCBI backbone (NCBIN:136417, NCBIP:136418)
C,Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Residues: 1-554 <KRA>
A;Cross-references: GB:U02270; GB:S64757; NID:g406048; PID:g406049
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208; Conservative
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267 287 327 346 387 405 429 458 449

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A,Molecule type: mRNA
A,Residues: 1-537 <SEN>
A,Cross-references: EMBL:D16639; NID:g391621; PIDN:BAA04065.1; PID:d1004583; PID:g391622
C,Keywords: glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Sendai, Y.; Abe, H.; Kikuchi, M.; Satch, T.; Hoshi, H.
Biol. Reprod. 50, 927-934, 1994
A;Title: Purification and molecular cloning of bovine oviduct-specific glycoprotein.
A;Accession: S57197; MUID:94257768; PMID:8199272
A;Accession: S57197
A;Status: preliminary
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                                                                                                                                                                                                                         CYFTIWAQYRQGRAKFVPEDYTPGICTHILFAFGWMA-DYTVRAYDP--ADLFNDWAGE 113
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oviduct-specific glycoprotein 95K precursor - bovine (fragment)
C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 05-Nov-1999
C;Accession: 857197
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                                                                                                               229 GYDIPNIAPNFDFILLMSYDFFGAWASLVGFNSPLYATTELFAEWNGW-NVDSSARYWNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                          AYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLN
                                                                                                                                                                                                                                                                                                                                                                                                              268 NGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        328 EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC
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                                                                                G-YERFINILRIKNPELTIMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDFLQEYKFDG
                                                                                                                                                                                        LDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          347 GATR-YWDSQSQVPYLVQGNQWWSYDDEESFANKWAYVKREGYGGAFVWTLDFDDFNAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GPKN----PLLNKVHNMINGDEKNSFECIL---GPSTTTPT----PLTTPTTP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           519 ASLKYCTISTASGCSVTTTRAPTTTTKSAPT--VTTTTRAPTT----TPAF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 552
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTPTTPSPTTPTTPSPTT-----
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C;Accession: A53918
R;Krishnan, A.; Nair, P.N.; Jones, D.
J. Biol. Chem. C59, 20971-20976, 1994
J. Title: Isolation, cloning, and characterization of new chitinase stored in active f A;Title: Isolation, cloning, and characterization of new chitinase stored in active f A;Reference number: A53918; MVID:94342256; PMID:8063715
A;Accession: A53918
A;Actus: preliminary
A;Molecule type: mRNA
A;Actus: preliminary
A;Molecule type: mRNA
A;Cross-references: GB:U10422; NID:9533504; PIDN:AAA61639.1; PID:9533505
C;Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein C04F6.3 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: 20-sep-1999 #text_change 20-Sep-1999
C;Accession: T15408
R;Nhan, M.
Submitted to the EMBL Data Library, December 1995
A;Pescription: The sequence of C. elegans cosmid C04F6.
A;Reference number: 218346
A;Accession: T15408
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HLIYSFVGVN--GKDVKVLDPWSDLPGN---LDGFGKFTSLRKKNPSVKIMVAVGGWNAG 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEXYSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRE 182
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAK 301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTT--- 418
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                                                                                                                                                                                                                                                                                                                                   DB 2; Length 483;
                                                                                                                                                                                                                                                                                                                                Query Match 25.8%; Score 802; DB 2; Length 48 Best Local Similarity 36.1%; Pred. No. 1.4e-42; Matches 160; Conservative 89; Mismatches 162; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   419 TPTPTTTPTTTTTTPSPTTP 441
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Matches 178;
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37 CYVGTWSVYHK-VDPYTIBDIDPFKCTHLMYGFAKIDBYKYTIQVFDPYQDDNHNSWEKR

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Cybecies: Homo sapiens (man)
Cybecies: Homo sapiens (man)
Cybecies: 13860S
RyArias, E.B.; Verhage, H.G.; Jaffe, R.C.
Biol. Reprod. 51, 685-694, 1994
A;Title: Complementary deoxyribonucleic acid cloning and molecular characterization caracterists preliminary; translated from GB/EMBL/DDBJ
A;Reference number: 13860S
A;Reference number: translated from GB/EMBL/DDBJ
A;Reference number: 1664 cRES>
A;Residues: 1-654 cRES>
A;Residues: 1-654 cRES>
A;Cosss-references: EMBL:U09550; NID:9529147; PID:9529148
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
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NiAlternate names: 39K synovial protein
C:Species: Homo sapiens (man)
C:Species: Amar-1995 #sequence_revision 23-Mar-1995 #text_change 22-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                282 IGPASPGKYTKQEGFLAYFEICSFVWGAKKHW----IDYQYVPXANKGKEWVGYDNAISF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 KGMSPPGFISGEEGVLSYIELCOLF--OKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188 EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      390 İSLİQFWLSSAVNSSSTDPERLAVİTAWİTDSKILPPGGEAGVİEIHGKCENMİLTPRGİ
                TITPSPTTPTTPSPT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68 PAKIDBYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS
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                                                    390 TPSPKFWFSTAVNSSRIGPEMPTMTRDLTTGLGILPLGGEAVATETHRKSATMTTTPRGE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 668; DB 2; Length 65; Pred. No. 4.7e-34; 91; Mismatches 192; Indels
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                                                                                                                                   450 TATPTRIPLSSGRRTAAPEGKTESPGEKPLTS
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Best Local Similarity 33.1%;
Matches 176; Conservative 9
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                                                                                             467 TPTPT-TP-
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C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 16-Aug-1996 #text_change 05-Nov-1999
C;Accession: 146470
R;DeSouza, M.M.; Murray, M.K.
Endocrinology 136, 2485-2496, 1995
A;Title: An estrogen-dependent secretory protein, which shares identity with chi and embryo development.
A;Reference number: 146470, MUID:95269691; PMID:750470
A;Accession: 146470
A;Accession: 146470
A;Accession: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-539 <DES>
A;Cross-references: EMBL:U16719; NID:g885600; PIDN:AAC48471.1; PID:g885601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168 KNEAQLTWRPRLLLSAAVSGDPHVIQKAYDARLLGRLLDFISVLSYDLHGSWEKVTGHNS 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 PLYKRPDETDELHTYFNVNYTWHYYLNNGATRDKLVMGVFFYGRAWSIEDRSKLKLGDPA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGPASPGKYTKQAGFLAYYEVCSFVQRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGY 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLAFLKELGVSGVMVWSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTT 418
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       228 PLFSLPGDPK-----SSAYAMSYWRQLGVPPEKTLMGLPTYGRTFHLLRASQNELGAGA 281
                                    224
                                                                          300
                                                                                                 TPTP----TTTPTTPTTTPTTTPSPTTTPSPTTP-----TTTPSPTTPSPTTPSPT 466
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                                                                                                                                                       KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
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                      EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                          PLYKRPDETDELHTYPNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
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                                                                                                                                                                                                                                                                                                                                                                                                                      447 IAIPTRIPLSFGRHTAAPEGKTESPGEKPLTTVGHLAVSP 486
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Pred. No. 3.2e-35;
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33.8%;
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Best Local Similarity
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genetic markers generally
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C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 19-Mar-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000
C;Accession: 861551; 861550; T48271
R;Morrison, B.W.; Leder, P.
Oncogene 9, 3417-3426, 1994
A;Title: new and ras initiate murine mammary tumors that share genetic markers ge
A;Atitle: nucleic acid sequence not shown
A;Reference number: 148271; MUD:95060797; PMID:7970700
A;Accession: 861551
A;Residues: 1-405 cMOR1>
A;Residues: 1-405 cMOR1>
A;Residues: 1-405 cMOR1>
A;Cross-references: EMBL:X93035; NID:g1085065; PIDN:CAA63603.1; PID:g1085066
R;Morrison, B.W.
S;Dmitted to the EMBL Data Library, November 1995
A;Reference number: 861550
A;Reference number: 861550
A;Accession: 861550
A;Accession: 861550
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                                                                                                                                                                                                                                                                                                                                                           131 GFDGLDLAWISPGRR-----DKRHLTTLVKEMKABFVRBALPGTBRLLLSGAVSAGKVA 184
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A,Molecule type: mRNA
A,Residues: 1-245, 11, 247-330, 'H',332-350,'MVWALDLDDFQGTCQPKEFFPLTNAIKDALA' <
A,Cross-references: EMBL:X93035; NID:g1085065; PIDN:CAA63603.1; PID:g1085066
A,Note: the differences at the carboxyl end are due to a frameshift error
                                                                                                                                                                                                 92 W-EKRGYERFINILREKNPELTIMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEY
                                                                                                                                                                                                                                265 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        23 KLYCYFTSWSQYREGVGSFLPDAIQPFLCTHIYSFANIS------SDNMLSTW
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                                                                                         34 RIVCYVGTWSVYHKVDPYTIED-IDPFKCTHLMYGFAKIDEYKY-TIQVFDPYQDDNHNS
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     36.6%; Pred. No. ....
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Superfamily: Streptomyces chitinase chi40
:1-21/Domain: signal sequence #status predicted <SIG>
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Best Local Similarity 34.4'
Matches 140; Conservative
                                    139; Conservative
              Local Similarity
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C; Superfamily:
F;1-21/Domain:
F;22-405/Produc
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C; Accession: A49562; S10677; A33162
R; Akakala, B.E.; White, C.; Recklies, A.D.
J. Biol. Chem. 268, 25803-25810, 1993
A; Title: Human cartilage gp-39, a major secretory product of articular chondrocytes and A; Reference number: A49562; MUID:94064658; PMID:8245017
A; Accession: A49562
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-383 cHAK>
A; Residues: 1-383 cHAK>
A; Cross-references: GB: M80927; NID:9348911; PIDN:AAA16074.1; PID:9348912
R; Nyirkos, P.; Golds, E.E.
Biochem. 10. 269, 265-268, 1990
A; Title: Human synovial cells secrete a 39 kDa protein similar to a bovine mammary protein A; Reference number: $10677; MUID:90328983; PMID:2375755
A; Residues: 22-40, X', 42-45 cMY2>
C; Superfamily: Streptomyces chitinase chii40
C; Keywords: cartilage; extracollular protein; glycoprotein
F; 1-21/Domain: signal sequence #status predicted <8G>
F; 22-383/Product: cartilage glycoprotein gp39 #status predicted <AMT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
551327
Chaparin-binding glycoprotein 38K - pig
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 22-Jun-1999
C;Accession: S51327
S;Backelton, Lu, Mann, D.M.; Millis, A.J.T.
Submitted to the EMBL Data Library, January 1995
A;Description: Identification of a 38kDa heparin-binding glycoprotein (gp38k) in differe
                                                                                                                                                                                                                                                                                                                                       similar to a bovine mammary prote
                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRG---YERFINNLRLKNPELTTMISLG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 GWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYL 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVG 351
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALVRELKDAF----EP--HGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMVWTYDYHGG 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      232 WENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDR 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 QTGFVVLVLLLQCC-----SAYKLVCYYTSWSOYREGDGSCFPDALDRFL 50
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----SNDHIDTWEWNDVTLYGMLNTLKNRNPNLKTLLSVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SETGVGAPISGPGIPGRFTKEAGTLAYYEICDFLRGATVHRTLGQ--QVPYATKGNQWVG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YDDLASISCKLAFLKELGVSGVMVWSLENDDFKG-HCGP--KNPLLNKVHNMI 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21.3%; Score 662; DB 2; Length 38 34.9%; Pred. No. 5.5e-34; ive 81; Mismatches 136; Indels
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A,Status: preliminary
A,Molecule type: mRNA
A,Resicule: 1-33 <SHA>
A,Coss-references: EMBL:Z47803; NID:g634097;
C,Superfamily: Streptomyces chitinase chi40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 34.91
Matches 144; Conservative
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셤 ò 유 Š 임 8 6 ò d ò 6 8 쉽 Length 383;

5; B

Score 650;

20.9%;

us-09-662-293-15.rpr

OY 150 YKFDGIDLDWEYPGSRLGNPKIDKQNYLALVRELKDAPEPHGYLLTAAVSPGKD 203	chitinase (EC 3.2.1.14) MF1 - nematode (Brugia malayi) C;Species: Brugia malayi C;Species: Brugia malayi C;Species: Brugia malayi C;Species: Brugia malayi C;Species: Brugia malayi C;Species: Brugia malayi C;Accession: A3821 R;Puhrman, J.A.; Lane, W.S.; Smith, R.F.; Piessens, W.F.; Perler, F.B. R;Puhrman, J.A.; Lane, W.S.; Smith, R.F.; Piessens, W.F.; Perler, F.B. R;Puhrman, J.A.; Lane, W.S.; Smith, R.F.; Piessens, W.F.; Perler, F.B. Rycos. Natl. Acad. Sci. U.S.A. 89, 1548-1522, 1992 A,Title: Transmission-blocking antibodies recognize microfilarial chitinase in brugian ly A;Reference number: A38221; MUID:92179220; PMID:1542646 A,Accession: A38221 A,Status: preliminary; not compared with conceptual translation A,Residues: 1-504 <fuh> A,FUHD A,FORSE-references GBM73689; NID:9156063; PIDN:AAA27854.1; PID:9156064 A,Notes: sequence extracted from NCBI backbone (NCBIP:85345) C;Keywords: glycosidase; hydrolase; polysaccharide degradation Cuery Match Best Local Similarity 30.1%; Pred. No. 3e-30; Matches 156; Conservative 86; Mismatches 208; Indels 69; Gaps 17;</fuh>
RESULT 12 S27879 Secretory protein YM-1 precursor - mouse C,Species: Was musculus (house mouse) C,Date: 17-Apt-1993 #sequence_revision 17-Apt-1993 #text_change 22-Jun-1999 C,Accession: S27879 C,Accession: S27879 R,Chang, N.C. A., Liu, C.H., Chang, A.C. submitted to the EXBL bata Library, June 1992 A,Description: Molecular characterization of a secretory protein (YM-1) transiently expr A,Accession: S27879 A,Accession: S27879 A,Accession: S27879 A,Molecule type: mRNA A,Residues: 1-399 CHA> A,Cross-references: BMBL:M94584; NID:g202441; PIDN:AAB62394.1; PID:g202442 A,Cross-references: BMBL:M94584; NID:g202441; PIDN:AAB62394.1; PID:g202442 C,Superfamily: Streptomyces chitinase chi40 F;1-21/Domain: signal sequence #status predicted <mgp> C,Superfamily: Streptomyces chitinase chi40 F;22-399/Product: secretory protein YM-1 #status predicted <mat> Query Match Best Local Similarity 36.3%; Pred. No. 1.3e-30; Matches 141; Conservative 67; Mismatches 140; Indels 40; Gaps 14;</mat></mgp>	37 CYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQ-DDNHNSWEK 94 27 CYYTNWAQYRDGEGKFLPGNIPNGLCTHILYAFAKVDELGDSKPFEWNDEDTEWSK 82 95 RGYERPUNILRIKNPELTTMISLGGWYEGSEKXSDXAANPTYRQQFIQSVLDFLQEYKFDG 15 183 GMYSAVTKLRETNPGLTVLLSYGGWYEGSEKXSDXAANPTYRQQFIQSVLDFLQEYKFDG 15 155 LDLDWEYP-GSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDIG 14 155 LDLDWEYP-GSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKE 21 143 FDLDWEYPPGVAEEHAKLVEAMKTAPERKEATSGKQF-LLLTAAVSPGKDKIDGSYNVES 20 214 INKLEDWMAVWTXDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTWHYYLNNGATRD 27 1
Qy 34 RIVCYVGTWSVYRKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHN 90 3. SLMCYYTSWAKDRPIEGSFKPGNIDPCLCTHLIYAFAGMQNNEITYT	EETIRIKMKNIKEKGYGGAFI LGPSTTTPTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
260 YTMHYYLANGATRDKLVMGVPPYGRAMSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 31 246 SIISYWXDHGAASEKLIVGFPAYGHTFILSDPSKTGIGAPTISTGPPGKYTDESGLAYY 30 320 ELCQLPQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGYMYW 37	RESULT 14 D83764 Chitimes BH0916 [imported] - Bacillus halodurans (strain C-125) C;Species: Bacillus halodurans C;Species: Bacillus halodurans C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 15-Jun-2001 C;Accession: D83764 K;Takami, H; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Hiran Nucleic Acids Res. 28, 4317-4331, 2000 A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and c;A;Accession: D83764 A;Accession: D83764 A;Status: preliminary A;Molecule type: DNA A;Residues: 1-599 <sto> A;Cross-references: GB:AP001510; GB:BA000004; NID:g10173440; PIDN:BAB04635.1; GSPDB:GN001</sto>

23;

Gaps

156;

Indels

67; Mismatches 185;

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222 QNYTLILSKIREKLDAAGAVDGKKYLLTIA-SGASATYAANTELAKIAAIVDWINIMTYD 280
                                                                                                                                                                                                                                                                                                                                      GWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYP--GSRLGNPK--IDK 173
                                                                                                                                                                                                         GW-TWSNRFSDVAATAATREVFANSAVDFLRKYNFDGVDLDWEYPVSGGLDGNSKRPEDK 221
                                                                                                                                                                                                                                                                                                                                                                                                        YHGGWENFYGHNAPLYKRPDET----DELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487 ASTDNVGVTGYNVYNGANLATSVTGTTATISGLTAGTSYTFTIKAKDAAGNLSAASNAVT
                                                                                                                                                                                                                                             QNYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMVWTYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392 TAKVPYLYNASNKRFISYDDAESVGYKTAYIKSKGLGGAMFWELSGDRNK------
                                                                                                       DEYKYTIOV------FDPYQDDNH----NSWEK---RGYERFNNLRLKNPELITMISLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395 NKVHNMINGDEKNSFECILGPSTTTPTPTTTTTTTTTPTTF-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547 VSTTAQPGGDTQAPTAPTNLASTAQTTSSITLSWTAST 584
                                   34 RIVCYVGTWSVYHKVDPYTIEDIDPPKCTHLMYGFAKI-
   170; Conservative
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Sha368
Chitinase (EC 3.2.1.14) precursor - Bacillus circulans
C;Species: Bacillus circulans
C;Species: Bacillus circulans
C;Date: 28-Jun-1991 #sequence_revision 28-Jun-1991 #text_change 15-Oct-1999
C;Accession: A3810k; K.; Oyanagi, W.; Ohnishi, K.; Tanaka, H.
G; Biol. Chem. 265, 15659-15665, 1990
A;Title: Gene cloning of chitinase A1 from Bacillus circulans WL-12 revealed its evoluti
A;Reference_number: A38368; WJID:90368776; PMID:2203782
A;Accession: A38368
A;Statuse preliminary
A;Molecule type: DNA
A;Residues: 1-699 <WAI>
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                                                                                                                                                                                                                                IRKYGFDGVDVDWEYPVSGGLPGNSRRPEDKENHVLLLQEVRDKLDEAGQEDGKDYLLTI 245
                                                                                                                                                                                                                                                                                                                                                                                                                        A--vSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETD-ELH 253
                                                                                                                                                                                                                                                                                                                                                                                                                                          246 ASGASPGYVENNK---LNEIAEIVDWINIMTYDFNGGWQNISGHNAPLYYDPATANTELP 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TPEHFNVESAVEGHLOAGVPEHKLVLGMPFYGRGWSNCDGA--NQGEYOR-CAPPREGTW 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EEGVLSYIELCOLFOXEEWHIQ---YDEYYN----APYGYN--DKIWVGYDDLASISCKL 362
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363 AFLKELGVSGVMVWSLENDDFKGHCGPKNFLLNKVHNMINGDEKNSFECILGPSTTTPTP 422
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PITSIPSPITIEH------TSEIPKYTIYVDG-----HLIKCYKEGD-IPHPINI 519
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                                                                                                                                                                                                                                                                                 90 NSWEK--RG-YERFINLRIKUPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDF 146
                                                                                                                                                                                                                                                                                                                                                    147 LQEYKFDGLDLDWEYP--GSRLGNPK--IDKQNYLALVRELKDAFEPHG-----YLLTA 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T--YFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISG 311
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                                                                                                                                                                                                             ----IDEYKYTIQVFDPYQD----DNH 89
                                                                                                                                                             KTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKC
                                                                                                       Gaps
                                                                     , Score 592, DB 2, Length 599;
; Pred. No. 2.3e-29;
98; Mismatches 216; Indels 134;
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A; Experimental source: strain C-125 C; Genetics: A; Gene: BH0916
                                                                     19.1%;
                                                                     Ouery Match
Best Local Similarity 29.0°
Matches 183; Conservative
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completed: March 22, 2004, 07:01:28
he : 37.0951 secs
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A,Cross-references: GB:MS7601, GB:U05599, NID:g1066341, PIDN:AAA81528.1, PID:g142688 C,Superfamily: fibronectin type III repeat homology C,Keywords: glycosidase, hydrolase, polysaccharide degradation

Length 699

Score 561; DB 2; Pred. No. 2.3e-27;

18.1%;

Query Match Best Local Similarity

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GenCore version 5.1.6
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OM protein - protein search, using sw model

March 22, 2004, 06:31:13; Search time 21.2868 Seconds (without alignments) 1357.597 Million cell updates/sec Run on:

US-09-662-293-15 3107 1 MKTIYAILSIMACIGLMNAS......IMPCPPGTIWCQEKLTCIGE 555 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

141681 seqs, 52070155 residues Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	362 mandu	3231	mus m	Q9w5u3 drosophila	Q9bzp6 homo sapien	Q11174 caenorhabdi	Q28990 sus scrofa	soq	Q28542 ovis aries		Q60557 mesocricetu	mus π	nomo	рошо	papic	Hod	แนย ก	brugia m	drosophil							autogra	7	\sim	96	20 strept	P96156 vibrio furn	75 thermop	_
	ID	IT MANSE	CHT1 HUMAN	CHIA_MOUSE	CHI1 DROME	CHIA HUMAN	CHIT_CAREL	OGP PIG	OGP_BOVIN	OGP_SHEEP	C3L1 MOUSE	OGP MESAU	OGP_MOUSE	OGP_HUMAN	C3L1 HUMAN	OGP PAPAN	C3L2 HUMAN	CHT1_MOUSE	CHIT_BRUMA	CHI3_DROME	CH11_BACCI	CHI4 TRIHA	CHI1_APHAL	CHIA_SERMA	CHIA_ALTSO	CHIT_NPVOP	CHIT_NPVAC	CHIB SERMA		CHI1_COCPO		CHID_VIBFU		MUC2_HUMAN
	8		-	Н	Н	Н	Н	-	rH			Н	н	н	н	-4	Н	Н	٦	-	н	н	н	Н	Н	н	۲-4	~	-	~ +	Н	Н	Н	Н
	Length		466	473	208	476	617	527	537	539	381	671	721	678	383	623	390	396	504	458	669	423	423	263	820	550	551	499	619	427	610	1046	474	5179
жo (Match	27.	23.8	ω,	e,	ď	22.7	22.4	(1)	N	М	-	-	\vdash	Н	_	0	σ	σ	α	œ	ന	13.2	S.	N	2	ч	-+	\rightarrow	0	0	9.0	9.6	8.3
	Score	38.5		734.5	723	90	05	696.5	85	685	680	680	680	699	662	654.5	630	11	604.5	576	561	411	410.5	407.5	384	377.5	60	353	341	339.5	326	280	266.5	259
i	Result No.		7	M	4	ιΩ	9	7	œ	on.	10	11	12	13	14	15	16		18	19	20	21	22	23	24	25	56	27	28	59	30	31	32	33

Q62635 rattus norv Q05049 xenopus lae	O10341 orgyia pseu P10667 xenopus lae P22533 caldocellum	P14918 zea mays (m Q06885 dictyosteli P47179 saccharomyc	P22699 dictyosteli P09805 kluyveromyc P24152 sorghum bic	P02840 drosophila
MUC2_RAT MUC1_XENLA	Y091_NPVOP MUA1_XENLA MANB_CALSA	EXTN MAIZE GP10 DICDI DAN4 YEAST	GUN6_DICDI KTXA_KLULA EXTN_SORBI	SGS3_DROME
н н		a a a	444	н
1513	279 400 1331	267 544 1161	705 1146 283	307
0.7	7.7 4.7 8.7	1.0.0	6.66 6.90	6.7
247	238 230 227.5	221 217.5 217.5	215.5 215.5 208.5	207
ы ы 4 г	36 37 38	3.9 4.0 1.0	4. 4. 4. 6. 6. 4.	4.5

ALIGNMENTS

Euteleostomi;

(Human)

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Fusetti F., von Moeller H., Houston D., Rozeboom H.J., Dijkstra B.W., Boot R.G., Aerts J.M.F.G., van Aalten D.M.F.;
"Structure of human chitotriosidase. Implications for specific inhibitor design and function of mammalian chitinase-like lectins.";
J. Biol. Chem. 277:25537-25544 (2002).
-!- FUNCTION: Degrades chitin and chitotriose. May participate in the defense against nematodes and other pathogens. Isoform 3 has no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     enzymatic activity.
--- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosamine polymers of chitin.
--- SUBDUIT: Monomer.
--- SUBCELLULAR LOCATION: Secreted. A small proportion is lysosomal.
--- ALTERNATIVE PRODUCTS:
                                                                                        SEQUENCE FROM N.A. (ISOFORMS 1 AND 2), FUNCTION, AND SUBCELLULAR
                                                                                                                                                                                                                                               SEQUENCE OF 22-42 AND 178-198, FUNCTION, AND TISSUE SPECIFICITY MEDLINE-95130187; PubMed=7836450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 22-386 IN COMPLEX WITH CHITOBIOSE AND ALLOSAMIDIN.
MEDLINE=22095530; Pubmed=11960986;
                                                                                                                                                                                                                                                                                                          "Purification and characterization of human chitotriosidase, a member of the chitinase family of proteins."; J. Biol. Chem. 270:2198-2202(1995).
                                                                                                                                                                                    'Cloning of a cDNA encoding chitotriosidase, a human chitinase
                                                                                                                                                                                                                                                                                                                                                                      POLYMORPHISM, AND DESCRIPTION OF ISOFORM 3.
MEDLINE=98421482; Pubmed=9748235;
Boot R.G., Fenkema G.H., Verhock M., Strijland A., Bliek J.,
de Meulemeester T.M.A.M.O., Mannens M.M.A.M., Aerts J.M.F.G.,
"The human chitotriosidase gene. Nature of inherited enzyme
                                                                                                                                                                                                                                                                    Renkema G.H., Boot R.G., Muijsers A.O., Donker-Koopman W.E., Aerts J.M.F.G.;
                                                                                                                                                      Boot R.G., Renkema G.H., Strijland A., van Zonneveld A.J.,
                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butele
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                    produced by macrophages.";
J. Biol. Chem. 270:26252-26256 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biol. Chem. 273:25680-25685(1998)
                                                                                                                          TISSUE=Macrophage;
MEDLINE=96064695; PubMed=7592832;
                                                               NCBI_TaxID=9606
                                                                                                                                                                      Aerts J.M.F.G.;
   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          290
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSE 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56 IYSPIGVTEGNSEVLIIDPELD-----VDKNGFRNFTSLRSSHPSVKFMVAVGGMAEGSS 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111 KYSHMVAQKSTRMSFIRSVVSFLKKYDFDGLDLDWEYPGAADRGGSFSDKDKFLYLVQEL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231 LYKRPHD-OWAYEKLNVNDGLHLWEEKGCPSNKLVVGIPFYGRSFTLSAGNNNYGLGTFI 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIBLCQLFQKEE--WH1QYDEYYNAPYGYNDKI 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             409 FECILGESTITPIPITIPITET -----TIPITES-----PITPITESPITPITESP
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                                                                                                                                                                                                                                                                                                                                                                         6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
                                                                                                                                                                                                                                                                                                                                                                                                      3 ATLATLAVLALATAV-----QSDSRARIVCYFSNWAVYRPGVGRYGIEDIPVEKCTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIBD-------
                                                                                                                                                                                                                                                                                                          ; Score 838.5; DB 1; Length 554;
; Pred. No. 6.3e-39;
79; Mismatches 210; Indels 91; Gaps
               Pfam; PF00704; GlyGo_hydro 18; 1.
SMART; SM00494; CheBD2, 1.
SMART; SM00636; Glyco_18; 1.
SMART; SM00636; Glyco_18; 1.
SMART; SM00636; Glyco_18; 1.
PROSITE; PS50946; CHIT BIND_II; 1.
PROSITE; PS01095; CHITIBINE II; 1.
PHOGIUE; Glycosidase; Chitin degradation; Chitin-binding; Signal;
                                                                                                                                                     ENDOCHITINASE.
SER/THR.RICH.
CHITIN-BINDING TYPE-2.
PROTON DONOR (BY SIMILARITY).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
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                                                                                                                                                                                                                                                                             62203 MW;
                                                                                                                                                                                                                                                                                                             27.0%;
                                                                                                                                                                                                                                                                                                                           35.4%;
                                                                                                                                                                                                                                                                                                                           Best Local Similarity 35.4%
Matches 208; Conservative
Pfam; PF01607; CBM_14; 1
                                                                                                                                        545 S
                                                                                                                          Glycoprotein.
SIGNAL
                                                                                                                                                                                    DOMAIN
ACT SITE
CARBOHYD
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CARBOHYD
SEQUENCE
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novel

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Note-Duplication of 24 bp in exon 10 leads to the use of a cryptic splice site. The normal splice site is still present but
                                                                                                                                                                                                                                                                                                                                                                                                                                                   macrophages.

DOLYMORPHISM: A 24 bp duplication in exon 10 leads to the activation of an alternative splice site and the production of an alternative splice site and the production of an inactive protein. About 6% of the population are deficient for CHIII activity, while 35% are carriers and show reduced enzyme levels. People with CHIII deficiency appear perfectly healthy. MISCELLANGOUS: Patients with type 1 Gaucher disease (GD I) [MIN:230800] have very high plasma levels of CHIII, and this can be used as diagnostic aid and to evaluate the success of treatment. Successful therapy brings the CHIII activity levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE SPECIFICITY: Detected in spleen. Secreted by cultured
                                                                                                                       IsoId=Q13231-2; Sequence=VSP_008631, VSP_008632;
                                                                                                                                                                                                                       :soId=Q13231-3; Sequence=VSP_008633;
                            IsoId=Q13231-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               back to normal
                                                                                                                                                                                                                                                                                                                                                                       nseq;
Name=1;
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CHT1_HUMAN STANDARD; PRT; 466 AA.
Q13231; Q9H3V8;
15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Chitotriosidase 1 precursor (EC 3.2.1.14) (Chitinase 1).

RESULT 2
CHT1 HUMAN
ID CHT1 H1
DT 15-MAR
DT 15-MAR
DT 15-MAR
DT 15-MAR

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CHIA_
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           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -EKRGYERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYK 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           265 YINNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polysaccharide degradation, Hydrolase, Glycosidase, Chitin-binding,
Signal, Alternative splicing; 3D-structure.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28;
                                                                                                                                                                                                                                 GO GO:0005615; C:extracellular space; TAS.
GO; GO:0005615; C:extracellular space; TAS.
GO; GO:0005617; P:response to bacteria; TAS.
GO; GO:0009617; P:response to bacteria; TAS.
GO; GO:0009617; P:response to pest/pathogen/parasite; TAS.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001279; Glyco_hydro_18.
Pfam; PF01607; CBM 14; 1.
Prodom: PD000471; Glyco_hydro_18; 1.
SWART; SM00494; ChEBD2; 1.
SWART; SM00494; ChEBD2; 1.
PROSITE; PS01095; CHITINAE 18; 1.
PROSITE; PS01095; CHITINAE 18; 1.
RPOSITE; PS01095; CHITINAE 18; 1.
RPOSITE; PS01095; CHITINAE 18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SL -> NG (in isoform 2).
/FIId=VSP 008631.
Missing (in isoform 2).
/FIId=VSP 008632.
Missing (in isoform 3).
/FIId=VSP 008633.
/FIId=VSP 008633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHITOTRIOSIDASE 1.
CHITIN-BINDING TYPE-2.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23.8%; Score 738; DB 1; 34.2%; Pred. No. 1.6e-33;
                                                                                                                     EMBL, U29615; AAC50246.1; -...
EMBL, U52662; AAG10644.1; -...
PDB, 1GUV; 31-JAN-02.
PDB, 1LG1; 18-SEP-02.
PDB, 1LG2; 18-SEP-02.
Genew, HGNC: 19-G1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 466 AA; 51681 MW;
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466
140
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387
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4117
140
26
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386
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DISULFID
DISULFID
VARSPLIC
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셤
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Kawai U., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., A Alzawa T., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Filschmann W., Gasterland T., Gissi C., King B., Kochiwa H., Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Aswinstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchinoni L., Mashima U., Mazaraelli J., Mondone F., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L., Whyshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S., Wallender D., Matsuki Y., Mattaka Y., Kawaji H., Kohtsuki S., Matsuki Y., Mattaka M., Rodriguez I., Sakamoto N., Matsuki Y., Mattaka Y., Kawaji H., Kohtsuki S., Matsuki Y., Mattaka M., Kawaji H., Kohtsuki S., Matsuk, M., Mattaka M., Mattaka K., Mang K., Hayashizaki Y., Mattaka K., Mang K., Hayashizaki Y., Mattaka K., Mang K., Hayashizaki Y., Kawaji H., Kohtsuki S., Mattaka K., Mang K., Hayashizaki Y., Mattaka K., Mang K., Hayashizaki Y., Kawaji H., Kohtsuki S., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka K., Mattaka 
310 KGATKQKIQ-DQ--KVPY1FRDNQWYGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDPPA 366
                                                                                                                                                         ---FSCNOG------RYPLIQTLRQELSLPYLPSGT 394
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MEDLINE=2138825); PubMed=12477932;
MEDLINE=2238825); PubMed=12477932;
MEDLINE=2238825); PubMed=12477932;
MEDLINE=2138825); PubMed=12477932;
MINIOREDLINESTRIP, Full Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Haich F.,
Diatchenko L., Marusina K., Farmer A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
                                                                                              GHCGPKNPLLNKVHNMINGDEXNSFECILGPSTTTPTTPTTTTPTTTPTTTPSPTTPTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=BALB/c; TISSUE-Lung;
MEDLINE=21125893; PubMed=11085997;
Boot R.G., Blommaart B.F.C., Swart E., Ghauharali-van der Vlugt K.,
Bijl N., Moe C., Place A., Aerts J.M.F.G.;
"Identification of a novel acidic mammalian chitinase distinct from chitotriosidase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHIA_MOUSE STANDARD;
Q91XX3; Q99PH2; Q90B03; Q91LN1;
15-MAR-2004 (Rel. 43, Last sequence update)
15-WAR-2004 (Rel. 43, Last annotation update)
15-WAR-2004 (Rel. 43, Last annotation apdate)
Acidic mammalian chitinase precursor (EC 3.2.1.14) (AMCase) (YNL).
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                              445 PSPTTPTTTPSPTTPSPTTPT 469
                                                                                                                                                                                                                                                                                            395 PELEVP-KPGQPSEPEHGPSPGQDT
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STRAIN=C57BL/6J; TISSUE=Stomach;
MEDLINE=21085660; PubMed=11217851;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          musculus (Mouse)
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REMBL; AK008633; BAB25795.1; -...

REMBL; AR011134.1; AH111134.1; ALT_INIT.

EMBL; AR154571; AAR314548.1; ALT_INIT.

EMBL; AR154571; AAR31644.1; ALT_INIT.

EMBL; AR1592052; Chia.

GO; GO:0004568; F:chitin catabolism; IDA.

GO; GO:0004568; F:chitin catabolism; IDA.

RITEPTO; IPR001223; Glyco hydro_18.

RITEPTO; IPR001223; Glyco hydro_18.

RITEPTO; IPR001223; Glyco hydro_18.

RITEPTO; IPR0014; Glyco hydro_18.

REMBL; SM044; Glyco hydro_18; 1.

RART; SM0464; ChED2; 1.

RART; SM0464; ChED2; 1.

REMBL; PS05176; PS05040; CHIT BIND_II; 1.

REMBL; PS06176; PS05040; CHIT BIND_II; 1.

REMBL; PS06176; PS05040; CHIT BIND_II; 1.

REMBL; PS06176; PS05040; CHIT BIND_II; 1.

ROJPSGCCHATIGE metabolism; Chitin degradation; Hydrolase; Glycosidase; Chitin-binding; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS05040; PS0504040; PS05040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; PS0504040; 
Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E., Schnerrield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E., "Generation and initial analysis of more than 15,000 full-length human and mouse CDNA sequences."
                                                                                                                                                                                                                                                                                                                                                                                                                                          23.6%; Score 734.5; DB 1; Length 473; 36.3%; Pred. No. 2.5e-33; ive 72; Mismatches 148; Indels 57,
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CHITITA-BINDING TYPB-2.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
F > A (IN REF. 1).
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                                                                                                                                                                                                                                                                                                                                                                                                                  418
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                                                                                                                                                                                                                                                                                                                             307 GFISGEEGVLSYIELCQLFQK---EEWHIQYDBYYNAPYGYNDKIWVGYDDLASISCKLA 363
                                                                                                                                                                                                                                                                                                                                                        292 GPYTRQAGFWAYYEICTFLRSGATEVW----DASQBVPYAYKANEWLGYDNIKSFSVKAQ 347
                                                                                                                                                                                                                                                                                                                                                                                                                                           233 TETGS-NAYLAVVANYWANNGAPAEKLIVGFPEYGHTFILRNPSDNGIGAPISGDGPA
65 BITT------IEWNDVTLYKARNDLKORNSKLKTLLAIGGWNFGTAPFTTWVSTS
                                                                                       192 ----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRP
                                                                                                                                                                           247 DETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPP
                                                                                                                                                                                                                                                                                                                                                                                                                  364 FIKELGVSGVMVWSLENDDFKG-HCG----PKNPLLNKVHNMINGDEKNSFECILGPSTT
                                                                 134 TYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=Berkeley;
MEDIINE=22426071; PubMed=12537574;
HOSKINS R.A., Smith C.D., Carlson J.W., Carvalho A.B., Halpern A.,
Kaminker J.S., Kennedy C., Mungall C.J., Sullivan B.A., Sutton G.G.,
Yasuhara J.C., Wakimoto B.T., Myers E.W., Celniker S.E., Rubin G.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila.";
Insect Mol. Biol. 7:233-239(1998).
-!- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosamine polymers of chitin.
-!- SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Heterochromatic sequences in a Drosophila whole-genome shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Fruit fly).
Eukaryota, Metazoa, Arthropoda, Hexapoda; Insecta; Pterygota;
Neoptera; Endopterayota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             de la Vega H., Specht C.A., Liu Y., Robbins P.W., "Chitinases are a multi-gene family in Aedes, Anopheles and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assembly.";
Genome Biol. 3:RESEARCH0085.1-RESEARCH0085.16(2002)
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MEDLINE=98324849; PubMed=9662472;
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12; 74 64

57; Gaps

158; Conservative

Similarity

Local

Best Loca Matches

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16 LMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEY

Ghauharali-van der Vlugt

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---EKRGYERFNNLRLKNPELTTMISLGGWYEGS-EKYSDMAANPTYROOFIOSVLDFLQ 148
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                                                                                                                                                                                                                                                                                                                                                                                                                 428 KIRHHRWNVYDTKGRIGPFAYHGDQWVSPDDVPMIRHKSEYIKAMGLGGAMIWALDLDD
                                                                                                                                                                                                                                                                                                                                                                                       34 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149 EYKFDGLDLDWEYP-----GSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKD
                                     R Flybase; FBGN0523703; Chtl.
R Flybase; FBGN0523703; Chtl.
R InterPro; IPRC01223; Glyco_hydro_18.
R InterPro; IPRC01223; Glyco_hydro_18.
R InterPro; IPRC01579; Glyco_hydro_18.2.
R Probom; PD000471; Glyco_hydro_18; 2.
DR Probom; PD000471; Glyco_18; 1.
DR SMART; SM00556; Glyco_18; 1.
DR PROSITE; PS01095; CHITINASE 18; 1.
DR Hydrolase; Glycosidase; ChiEin degradation; Multigene family.
ACM SITE 264 57751 MW; 26CA23B02EFDEE97 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa; Chordata; Craniata; Vertebrata, Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ISOFORM 1), FUNCTION, AND TISSUE SPECIFICITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIŜSUE=Lung;
MEDLINE=20018184; PubMed=10548734;
Saito A., Ozaki K., Pujiwara T., Nakamura Y., Tanigami A.;
"Isolation and mapping of a human lung-specific gene, TSA1902,
encoding a novel chitinase family member.";
Gene 239:325-331(1999).
                                                                                                                                                                                                                                                                                               23.3%; Score 723; DB 1; Length 508; 39.8%; Pred. No. 1.1e-32; tive 71; Mismatches 121; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHIA HUMAN STANDARD; PRT; 476 AA.
Q9BZP6; Q86UD8; Q9ULY3; Q9ULY4;
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Acidic mammalian chitinase precursor (BC 3.2.1.14) (AMCase)
(TSA1902).
  an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. (ISOFORMS 2 AND 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOFORM 1), FUI
TISSUE=Lung, and Stomach;
MEDLINE=21125893; PubMed=11085997;
                                                                                                                                                                                                                                                                                                                     Local Similarity Local hes 144; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
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A Straublerg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

RA Alusner R.D., Colling F.S., Wagner L., Shenmen C.M., Schuler G.D.,

R. Attachal S.F., Zeeberg B. Buecow K.H., Schaefer C.F., Blata N.K.,

R. Attachal S.F., Zeeberg B. Buecow K.H., Schaefer C.F., Blata N.K.,

R. Attachal S.F., Zeeberg B. B., Buecow K.H., Schaefer C.F., Blata N.K.,

R. Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Stapleton M., Scares M.B., Toshiyuki S., Carninci P., Prange C.,

R. Broak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunzatne P.H.,

R. Blosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunzatne P.H.,

R. Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

R. Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

R. Hilalon D.K., Mazny D.W., Sodergen B.J., Lu X., Gibbs R.A.,

R. Hiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

R. Achting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

R. Achting M., Madan A., Young A.C., Shevchenko Y., Smillus D.E.,

R. Achting M., Krzywinski M.I., Skalska U., Smailus D.E.,

R. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.",

R. Proc. Natl. Acad. Sci. U.S.A. 99:16699-16903(2002).

C. -: CATALVITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosanine polymers of chitin.

C. -: CATALVITIC ACTITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosanine polymers of chitin.

C. -: CATALVITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosanine polymers of chitin.

C. -: CATALVITIC ACTITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosanine polymers of chitin.
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Isoid=09BZP6-1; Sequence=VSP_008635;
Isoid=09BZP6-2; Sequence=VSP_008635;
Name=3; Synonyme=TSA1902-S;
Isoid=09BZP6-3; Sequence=VSP_008634;
-:-TISSUE SPECIFICITY: Highly expressed in stomach. Detected at lower levels in lung.
-:-SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
Soot R.G., Blommaart E.F.C., Swart E., Ghauharali-van der Vlugt K., Sijl N., Moe C., Place A., Aerts J.M.F.G.;
Identification of a novel acidic mammalian chitinase distinct from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SIMILARITY: Contains 1 chitin-binding type-2 domain.
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Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lack the signal sequence and are cytoplasmic.
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GO: GO: 0005737; C: cytoplasm; NAS.
GO: GO: 0004568; F: chitinase activity; NAS.
GO: GO: 0004568; F: chitin metabolism; NAS.
InterPro; IPR002557; Chitin bind PerA.
InterPro; IPR001253; Glyco hydro 18.
InterPro; IPR011579; Glyco hydro 18.
Ffam; PF001607; CBM_14; I.
Pfam; PF001607; CBM_14; I.
Pfam; PF001041; Glyco hydro 18; 1.
SWART; SM00494; ChEBD2; I.
SWART; SM00494; ChEBD2; I.
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EMBL; BC047336; AAH47336.1; ALT_INIT.
                                                                                                                                                                                    J. Biol. Chem. 276:6770-6778(2001)
                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=22388257; PubMed=12477932;
                                                                                                                                                                                                                                               [3]
SEQUENCE FROM N.A. (ISOFORM 2).
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MEDLINE=98324849; PubMed=9662472;
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                                                                                                                                                                                                                                                                                                                                                                                264
                                                                                                                                                                                                                                                                                                                                                                                                                         YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
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                                                                                                                                                                                                                                                                                              93 -EKRGYERFUNLKLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFLQEYK 151
                                                                                                                                                                                                                                                                                                                                                          FDGLDFDWEYPGSR-GSPPQDKHLFTVLVQEMREAFEQEAKQINKPRLMVTAAVAAGISN 190
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                                                                                                                                                                                                                                                                                                                                                                                            IQSGYEIPQLSQYLDYIHVMTYDLHGSWEGYTGENSPLYKYPTDTGS-NAYLNVDYVMNY
                                                                                                                                                                                                                                                     34 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                  IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
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PROSITE; PS50940; CHIT_BIND_II; 1.
PROSITE; PS01095; CHIT_BARE_I8; 1.
Carbohydrate metabolism; Chitin degradation;
Polysaccharide degradation; Hydrolase; Glycosidase; Chitin-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G-HCGP-KNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTFTTPS
                                                                                                                                                                                                                                 37;
                                                                                                                                                                                                            DB 1; Length 476;
                                                 BY SIMILARITY.
ACIDIC MAMMALIAN CHITINASE.
CHITIN-BINDING TYPE-2.
POLY-SER.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
MISSING (in isoform 3).
                                                                                                                                                                                                          22.8%; Score 708.5; DB 1; Length 35.9%; Pred. No. 6.4e-32; ive 75; Mismatches 154; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to the EMBL/GenBank/DDBJ databases
                                                                                                                                                       /FTIG=VSP 008635.
I -> V (IN REF. 1).
V -> G (IN REF. 1).
92B27BAD2F7EB4CC CRC64;
                                                                                                                                    /FTId=VSP 008634.
Missing (in isoform 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHIT_CAEEL STANDARD; PRT; 617 AA. 011374; 017321; Chovov-1997 (Rel. 35, Last sequence update) 15-WAR-2004 (Rel. 43, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rhabditidae; Peloderinae; Caenorhabditis.
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CHT-1 OR C04F6.3.
                                                                                                                                                                             432 1
52271 MW;
                                        Signal, Alternative splicing.
SIGNAL 1 21
CHAIN 22 476
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SEQUENCE OF 62-178 FROM N.A.
                                                                                                                                                                                                                                Matches 149; Conservative
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                                                                                                                                                                                       476 AA;
                                                                                                                                                                                                                     Similarity
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427
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                                                                      DOMAIN
DOMAIN
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CONFLICT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155 LDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDR 207
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208 AYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLN 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288 KGMPKEKIIVGMPTYGRGWTLNNASAINPGTSGSPAKITQYVQ-EAGVGAYFEFCEMLAN 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        328 EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC 387
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de la Vega H., Specht C.A., Liu Y., Robbins P.W.;
"Chitinases are a multi-gene family in Aedes, Anopheles and
Drosophila...
Insect Mol. Biol. 7:233-239(1998).
-!- CATALYTIC ACTIVITY: Hydrolyais of the 1,4-beta-linkages of N-
acetyl-D-glucosamine polymers of chitin.
-!- SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NormPep, | InterPro; | IPKu.; | InterPro; | IPKu.; | InterPro; | IPKu.; | InterPro; | IPK01223; | InterPro; | IPK011223; | InterPro; | IPK011579; | Glyco... | InterPro; | IPK011579; | Glyco... | InterPro; | IPK01607; | CBM 14; 2... | DR | Pfam; | PR01607; | CBM 14; 2... | DR | Pfam; | PR001047; | Glyco... | ProDom; | PR001047; | SM06494; | Chlyco... | Chlyco... | Chlyco... | DR | SMART; | SM00494; | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco... | Chlyco...
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                                                                                                                                                                                                                                                                                                                                                                                        hydrolases).
-!- SIMILARITY: Contains 2 chitin-binding type-2 domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388 GPKN----PLLNKVHNMINGDEKNSFECIL---GPSTTTPT----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF026152; AAB81847.1; -.
PIR; T15408; T15408.
PIR; T37249; T37249; T37249; T37249; T37249; T37249; T87249; T87249; T87249; T87249; T87249; T87249; T87249; T87249; T872401579; Glyco_hydro_18.
InterPro; IPR001223; Glyco_hydro_18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22.7%;
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281

337 413 471

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109 TMLSTFTNREKFIRSAIGLLRTHGFDGLDLFFLYPGLR-GSPRRDRWNFLFLEELLLAF 167
                                                                                                                                           188 EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA 240
                                                                                                                                                          16 RREAQLIMRPRILLSAAVSADPHVIQKAYDVRLIGRLIDFINVLSYDLHGSWEKVTGHNS 227
                                                                                                                                                                                                   PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
                                                                                                                                                                                                                                                          301 KGMSPPGFISGEEGVLSYIELCQLFQ--KEEWHIQYDEYYNAPYGYNDKIWVGYDDLASI 358
                                                                                                                                                                                                                             228 PLFSLSDDPK-----SSAYTMNYWRKLGAPPEKLLMGFPTYGRTFRLLKASKNELGAEA
                                                                                                                                                                                                                                                                           282 VGPASPGKYTKQAGFLAYYEVCSFVQRAKKRW---IDHQY-VPYAYRGKEWVGYDDDDISF
                                                                                                                                                                                                                                                                                                                                LLLWVGLV--LVLKHHNGAAH---KLVCYFANWA-FSRPGPASILPRDLDPFLCTHLVFA
                                                                                                                                                                                                                                                                                                                                                                                                    396 GLSTTVNSSRTCPESLAVTKOLTTOLGILPLGGEAVATETHGRSDNM-TVTPGGGLVAPT
                             68 PAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS
                                             58 FASMNDSQIVAK------DARD--BSIFYPEFNQLKERNEKLKTLLSIGGWNFGTSRFT
                                                                                    128 DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
                                                                                                                                                                                                                                                                                                                 SCKLAFLKELGVSGVMVWSLENDDFKG-HCG----PKNPLLNKVHNMINGDEKNSFECIL
                                                                                                                                                                                                                                                                                                                                                                         -----TPAPITSTPSP-----TTTEHTSETP 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                            455 RPTLSFGKLTVAPEGKTESPGEKAMTPVGHPSVTP 489
                                                                                                                                                                                                                                                                                                                                                                                                                                472 TP
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Q28042;
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                                                                       518
              SNSNGQLYPLISVIAKELGG-----VIIPKKGGVTTAPTTVATTVTTGRPPMTSAVTT 458
                                                                                                  -----PITTPSPITTPSPITTPSPITTPTPAPITISTPSPITTEHISSIPKYTTYVDGH 503
                                                                                                                                                                                                                                                                                                                                                                                                                                         459 TTAATTTTRAATTTTASNTNVCSGKSDGFYPNSNNCGLFVLCLSSKSYSMSCPSGLQYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      519 ASLKYCTISTASGCSVTTTRAPTTTTKSAPT--VTTTTRAPTTT-----TPAF----
                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                                                                                                                                                                                    01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
08-FEB-2003 (Rel. 41, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (POSP-E3).
                                                                                                                                                          552
                                                                                                                                                                          --KCTKOGFFGVPSDCLKFIRC--VNG--ISYNFECPNGLSFHADTMMC 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1; Length 527;
                                                                                                                                                          LIKCYKEGDIPHPINIHKYLVCEPVNGGWWVHIMPCPPGTIWCQEKLTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22.4%; Score 696.5; DB 1; Length 5 34.6%; Pred. No. 3.2e-31; ive 86; Mismatches 192; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31B78F49CA2363A2 CRC64;
                                                                                                                                                                                                                                                           527 AA
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                                           TTTPTTPSPTTPTTPSPTT-
                                                                                                                                                                                                                                                          STANDARD;
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402
441
527 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9823;
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                                                                                                                                                                                                                                                                                                                                                                                                                          BIOL. Reprod. 50:927-934 (1994).
-!- FUNCTION: Binds to oocyte zona pellucida in vivo. May play a rol in the fertilization process and/or early embryonic development.
-!- SUBCELDUAR LOCATION: Secretory granules.
-!- TISSUB SPECIFICITY: Oviduct.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
                                     01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (Fragment).
                                                                                                                                                                                                                                                                                                                      TISSUE-Oviduct;
MEDLINE=94257768; PubMed=8199272;
Sendal Y., Abe H., Kikuchi M., Sacoh T., Hoshi H.;
"Purification and molecular cloning of bovine oviduct-specific
537 AA
                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND SEQUENCE OF 19-47.
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; D16639; BAA04065.1; -.
STANDARD;
                                                                                                                                                                                                                                     Bovidae; Bovinae; Bos.
                                                                                                                                                                      Bos taurus (Bovine).
                                                                                                                                                                                                                                                             NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                           glycoprotein.";
                                                                                                                                                  OVGP1 OR OGP.
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19;

Gaps

59;

<u>:</u>

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IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--BDIDPFKCTHLMYG 67

Matches 178; Conservative

10

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Similarity

Local

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                                              Desouza M.M., Murray M.K.; "Desouza M.hich shares identity with "An estrogen-dependent secretory protein, which shares identity with
                                                                                          chitinases, is expressed in a temporally and regionally specific manner in the sheep oviduct at the time of fertilization and embryo
                                                                                                                                                                                                                                                   STRAIN=Merino; TISSUE=Oviduct;
MEDLINE=96329120; PubMed=8726871;
                                                                                                                                                 development.";
Endocrinology 136:2485-2496(1995)
                                                                                                                                                                                                                         SEQUENCE OF 10-539 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                173; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222
4 222
1 133
2 82
4 8 4 5
5 5 5 6
7 6 6
8 9 9 9 9 9
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CARBOHYD
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à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55 FASMSNNQ--IVPKDP-QD-----EKILYPEFNKCKERNRGLKTLLSIGGWNFGTVRFT 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           188 EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          225 PLFSLPGDPK-----SSAYAMNYWRQLGVPPEKLLMGLPTYGRTFHLLKASQNELRAQA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            279 VGPASPGKYTKQAGFLAYYEICCFVRRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KLAFLKELGVSGVMVWSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     419 TPTP----TITPTITPTITPSPTTPTTTPSPTTP-----TTTPSPTTP-466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      387 TPSPKFWFSTAVNSSRIGPEMPTWTRDLTTGLGILPPGGEAVATETHRKSETWTITPFKGE 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68 FAKIDEYKYIIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTIMISLGGWYEGSEKYS 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--BDIDPFKCTHLMYG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            165 KNEAQLIMRPRLILSAAVSGDPHVVQKAYEARLLGRLLDFISVLSYDLHGSWEKVTGHNS
                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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01-NOV-1997 (Rel. 35, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
Oviductin) (Estrogen-dependent oviduct protein) (Estrus-associated oviducal glycoprotein) (Occioucin) (Occioucin)
                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                   22.1%; Score 685.5; DB 1; Length 537; 33:3%; Pred. No. 1.3e-30;
                                                                                                                                                                                                                                                 OVIDUCT-SPECIFIC GLYCOPROTEIN N-LINKED (GLCNAC. . .) (POTENT; CFDCEE6F0212D791 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                    95; Mismatches 183; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    447 IATPTRIPLSFGRHTAAPEGKTESPGEKPLTTVGHLAVSP 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  467 TPTPT-TP-----TPAPTISTPSP-----TTTEHTSETP 494
       InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.2.
Pfam; PF00704; Glyco hydro 18; 1.
ProDom; PD000471; Glyco hydro 18; 1.
SWART; SW0636; Glyco 18; 1.
PROSITE; PS01095; CHITINASE 18; PALSE NEG Glycoprotein; Fertilization; Signal.
NUM TER 1 1 18
                                                                                                                                                                                                                         <1 18
19 537 OVJ
399 399 N-I
537 AA; 59617 MW; (
                                                                                                                                                                                                                                                                                                                                                                                                  Matches 173; Conservative
PIR; S57197; S57197.
                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                        CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
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Best Local
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OGP SHEEP
OGP SHEEP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DWAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109 KMLSTFSNRERFVKSVIALLRTHGFDGLDLFFLYPGLR-GSPARDRWTFVFLLEELLQAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 IMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1; Length 539;
                                                                                                                                                                                                                                                                        OVIDUCT-SPECIFIC GLYCOPROTEIN.
N-LINKED (GLCNAC. . .) (POTENT
M -> V (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22.0%; Score 685; DB 1; Length 539
33.8%; Pred. No. 1.4e-30;
.ive 90; Mismatches 185; Indels
                                                                                                                                                                                                                                                                                                                 13 M -> V (IN REF. 2).

122 K -> N (IN REF. 2).

282 A -> V (IN REF. 2).

375 A -> V (IN REF. 2).

44 R -> H (IN REF. 2).

520 I -> T (IN REF. 2).

59535 MW, F35000269987C193 CRC64;
                                         PIR; 146470; 146470.
InterPro; 18R01523; Glyco hydro 18.
InterPro; 18R01529; Glyco hydro 18.
InterPro; 19R01529; Glyco hydro 18.
ProDom; PD000471; Glyco hydro 18; 1.
SWART; SW00636; Glyco hydro 18; 1.
PROSITE; PS01095; GHTINASE 18; FALSE NEG. Glycoprotein; Fertilization; Signal.
SIGNAL
EMBL; U16719; AAC48471.1; -. EMBL; U17988; AAB01052.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
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Ovis aries (Sheep). Wakaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea, Bovidae, Caprinae, Ovis

SEQUENCE FROM N.A., AND SEQUENCE OF 22-39

NCBI_TaxID=9940;

us-09-662-293-15.rsp

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CARBOHYD
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Best Local
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           EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNYMTYDYHGGWENFYGHNA 240
                         PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
                                                                           301 KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                              KLAFLKELGVSGVMVWSLENDDPKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTT 418
                                                                                                                                                                                                               390 TPSPKFWFSTAVNSSRIGPEMPTMTRDLTTGLGILPLGGEAVATETHRKSATMTTTPRGE 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Morrison B.W., Leder P.,
"neu and ras initiate murine mammary tumors that share genetic markers generally absent in c-myc and int-2-initiated tumors.",
Oncogene 3:3417-3426 (1994)
-!- FUNCTION: May play an important role in the capacity of cells to respond to and cope with changes in their environment (By
                                                                                                                            282 AGPASPGKYTKQAGFLAYYEVCSFVQRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGY
                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                             16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Chitinase-3 like protein 1 precursor (Cartilage glycoprotein-39)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similarity).
SUBCELLULAR LOCATION: Extracellular (By similarity).
SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                TPTPT-TP-----TPAPTTSTPSPTTTEHTS 491
                                                                                                                                                                                                                                                                                                                                                        381 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGD; MGI:1340899; Chi311.
InterPro; IPR001223; Glyco_hydro_18.
InterPro; IPR001529; Glyco_hydro_18AS.
InterPro; IPR001579; Glyco_hydro_18; 1.
Pr0Dom; PD000471; Glyco_hydro_18; 1.
SWART; SM00636; Glyco_18; 1.
PROSITE; P$01095; CHITINASE_18; FALSE_NEG.
                                                                                                                                                                                                                                                                                       TATPTRIPLSSGRRTAAPEGKTESPGEKPLTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-FVB/N; TISSUE-Breast;
MEDLINE-95060797; PubMed=7970700;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X93035; CAA63603.1; -.
                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                              (GP-39) (BRP39 protein). CHI3L1 OR BRP39.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Glycoprotein; Signal, SignAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR, S61551; S61551.
                                                                                                                                                                                                                                                                                                                                                       C3L1_MOUSE
                                                                                                                                                                                                              419
                                                                                                                                                                                                                                                                467
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93 E---KRGYERFINNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFLQE 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150 YKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF----EP--HGYLLTAAVSPGKD 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244 YMIRLGAQASKILMGIPTFGKSFTLAS-SENQLGAPISGEGLPGRFTKEAGTLAYYEICD 302
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                                                                                                                                                                                                                                                                                                                                                                                                                                     33 KLVCYFTSWSQYREGVGSFLPDALQPFLCTHIIYSFANIS-----SDNMLSTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                264 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLKGDPAKGMSPPGFISGEEGVLSYIELCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324 LFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                                                                                                               Gaps
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Cricetinae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGP MESAU SILAL...

OGP MESAU SILAL...

OGOFUST, OG0526;

01-NOV-1997 (Rel. 35, Last sequence update)

15-UUL-1999 (Rel. 38, Last annotation update)

15-UUL-1999 (Rel. 38, Last annotation update)

Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)

Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)

Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)

Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)

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                                                   (POTENTIAL)
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                                                                                                                                                                                           Length 381;
                                                                                                                                                                        21.9%; Score boo,
37.1%; Pred. No. 1.8e-30;
iive 75; Mismatches 130; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Paquette Y., Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
381 CHITINASE-3 LIKE PROTEIN 1.
60 N-LINKED (GLCNAC. . .) (PO:
43001 MW; EF6581E8184F0450 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Paquette Y., Merlen Y., Malette B., Bleau G.;
"Allelic polymorphism in the hamster oviductin gene is
variable number of mucin-like tandem repeats.";
Mol. Reprod. Dev. 42:388-396(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-671 FROM N.A., AND REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
TISSUE=Oviduct,
MEDLINE=96115007; PubMed=7492686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361 OGTCOPKEFFPLTNAIKDAL 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 KGHCGPKN--PLLNKVHNMI 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96192955; PubMed=8607967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .ol. Reprod. 53:345-354(1995)
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                                                                                                                                                                                                                                                                               141; Conservative
         22 3
60
381 AA;
                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                                                                                                       282 MGPASPGKYTKQAGFLAYYEVCSFIQRAEKH--WIDHQYVPYAYKGKEWVGYDDAVSFSY 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340 KAMFVKKEHFGGAMVWTLDMDDVRGTFCGNGPPPLVHILNELLVRAEFNSTPLPQFWFTL 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTT-------PTTTP----SPTTPTPTPTPTPAPTTSTPSPTTTEHTSETP 494
                                                                                                                                                                          228 PLFSLPEDPK-----SSAFAMNYWRNLGAPADKLIMGFPAYGRTFHLLRESKNGLQAAS
                                                                   PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
                                                                                                                                                                                                                                                                                                                                                    301 KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
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-!- FUNCTION: Binds to oocyte zona pellucida in vivo. May play a role
in the fertilization process and/or early embryonic development.
-!- SUBCELLULAR LOCATION: Secretory granules.
-!- TISSUE SPECIFICITY: Epithelial cells of the oviduct.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                     DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
                                                                                                                                            EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 KLAFLKELGVSGVMVWSLENDDFKG-HCG-PKNPLLNKVHNMINGDEKNS----FECIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Molecular cloning and characterization of a mouse oviduct-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           460 PTTHAVALERNAMAPGAKTTTSLDLLSETMTGMTVTVQTQTAGRETMTTVGNQSVTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last amotetation update)
Oviducting elyoporotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein).
Mus musculus (Mouse)

Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Musinae, Mus.
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STRAIN=ICR; TISSUS=Coviduct;
MEDLINE=96115001; Pubmed=7492680;
Sendai Y., Komiya H., Suzuki K., Onuma T., Kikuchi M., Hoshi H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 AA
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InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PF00704; Glyco hydro 18; I.
ProDom; PD000471; Glyco hydro 18; 1.
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Biol. Reprod.
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Q62010;
                                        128
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FAKIDEYKYTIOVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYS 127
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H -> I (IN REF. 4).
D -> G (IN REF. 2 AND 3).
R -> Q (IN REF. 2 AND 3).
F -> Y (IN REF. 2 AND 3).
Q -> L (IN REF. 2 AND 3).
MISSING (IN REF. 2 AND 3).
T -> I (IN REF. 2 AND 3).
W; BB57E0E514EC1972 CRC64;
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Pred. No. 3.4e-30;
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R InterPro; IPR01223; Glyco hydro 18.

R InterPro; IPR01579; Glyco hydro_18AS.

Fam; PR00704; Glyco hydro_18AS.

R ProDom; PD000471; Glyco hydro_18; 1.

R PROSTIE; S000536; Glyco hydro_18; 1.

R PROSTIE; P801095; CHITINASE 18; FALSE NEG.

Glycoprotein; Fertilization; Repeat; Signal.
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Similarity 33.3%;
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VARIANT
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                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----YPEFNKIKERNRELKTLLSIGGWNFGTSRFTAMLSTLANREKFIDSVISFLRIHG 132
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---TTTPTTPTTPTTPTTPSPTTP-----TTTPS--PTTPTTTPSPTTPTTTPSPTTFF 469
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                                                                                                                                                                                                                                                                                                                                                                                                                 WEKRGYERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDFLQEYK 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YLNNGATRDKLVMGVPFYGRAMSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
                                                                                                                                                                                                                                                                                                                                                        23 KLVCYFTNWA-HSRPGPASIMPHDLDPPLCTHLIFAFASMSNNQI----VAKNLQDENVL- 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         192 IHTSYDALLLGRRLDFINVLSYDLHGSWEXFTGHNSPLFSLPEDSK-----SSAYAMNY
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                                                                                                                                                                                                                                                                                                                                 34 RIVCYVGIWSVYHKVDPYTI--EDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNS
                                                                                                                                                                                                                                                                                         Gaps
                                                                              OVIDUCT-SPECIFIC GLYCOPROTEIN.

21 X 7 AA TANDEM REPEATS OF S-K-T-T-
[TAP] -G-[IV].
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryoča, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OGP_HUMAN STANDARD; PRT; 678 AA.
012889; Q15881.
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (Mucin 9).
OVGP1 OR OGP OR MUC9.
                                                                                                                                                                                                                                                                                           82;
                                                                                                                                                                                                                                                 ch 21.9%; Score 680; DB 1; Length 721; il Similarity 33.7%; Pred. No. 3.6e-30; Conservative 79; Mismatches 184; Indels 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Oviduct;

BDLINE=99119256; PubMed=7819450;
Arias E.B., Verhage H.G., Jaffe R.C.;
"Complementary deoxyribonucleic acid cloning and molecular
                                                                                                                                                                                                           37246CBF01665652 CRC64;
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                                   Repeat; Signal POTENTIAL.
                       FALSE NEG
SMART, SM00636, Glyco 18; 1.
PROSITE, PS01095, CHITINASE 18;
Glycoprotein; Fertilization; Rep
                                                                                                                                           402 N-442 N-469 N-78807 MW;
                                                                                721
632
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442
469
4721 AA;
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486
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CARBOHYD
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                     Coville G.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: Binds to occyte zona pellucida in vivo. May play a rol
in the fertilization process and/or early embryonic development.
-!- SUBCELLIDIAR LOCATION: Secretory granules.
-!- TISSUB SPECIFICITY: Oviduct.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
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BY SIMILARITY.
CVIDUCT-SPECIFIC GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
characterization of an estrogen-dependent human oviductal
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N-LINKED (GLCNAC. .) (POTI

N-LINKED (GLCNAC. .) (POTI

N-LINKED (GLCNAC. .) (POTI

N-LINKED (GLCNAC. .) (POTI

N-LINKED (GLCNAC. .) (POTI

FITGE-VAR (16109.

M -> T (IN REF. 2).

Y -> H (IN REF. 2).

Y -> H (IN REF. 2).
                                                                                                                                                                                                                                         Jaffe R.C.;
Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21.5%; Score 668; DB 1;
33.1%; Pred. No. 1.5e-29;
iive 91; Mismatches 192,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MIM; 603578; -...
GO, GO:0007565; P:pregnancy; TAS.
InterPro; IPR001223; GIyco.hydro_18.
InterPro: IPR001579; GIyco.hydro_18.
ProDom; PD00047; GIyco.hydro_18; 1.
ProDom; PD000471; GIyco.hydro_18; 1.
PROSITE; PS01095; CHITINASE_18; FALSE NEG.
GIycoprotein; Pertilization; Signal; Polymor.
SIGNAL
                                                                                                                                                                                FROM N.A., AND VARIANT GLN-676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL, U09550, AAA66946.1; EMBL, U58010; AAB04126.1; CUNED EMBL, U58001, AAB04126.1; CUNED EMBL, U58003; AAB04126.1; JOINED EMBL, U58004; AAB04126.1; JOINED EMBL, U58006; AAB04126.1; JOINED EMBL, U58006; AAB04126.1; JOINED EMBL, U58009; AAB04126.1; JOINED EMBL, U58009; AAB04126.1; JOINED EMBL, U58009; AAB04126.1; JOINED EMBL, U58009; AAB04126.1; JOINED EMBL, AL390195; CAC36039.1; -
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· 75421 MW;
                                          lycoprotein.";
iol. Reprod. 51:685-694(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 33.1
es 176; Conservative
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678
4402
441
580
596
648
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678 AA;
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or fibroblasts
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                                                                                                                                                         EMBL; M80927; AAA16074.1; -...
EMBL; Y08374; CAA69661.1; -...
EMBL; Y08375; CAA69661.1; JOINED.
EMBL; Y08376; CAA69661.1; JOINED.
EMBL; Y08379; CAA69661.1; JOINED.
EMBL; Y08379; CAA69661.1; JOINED.
PIR; A49562; PA9562.
PDB; ILA7; 10-ARF-02.
Genew; HGNC:1932; CHI3L1.
                                                                                                                                                                                                                                                                                                                                                                                                                 Glycoprotein, Signal; 3D-structure
 mononuclear cells,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383 AA; 42613 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                            383
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OGP_PAPAN
ID OGP_PAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
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                                                                     RKEALLIMRPRILLSAAVSGVPHIVQTSYDVRFLGRLLDFINVLSYDLHGSWERFIGHNS 227
                                                                                                                                    281
                                                                                                                                                                                                                                  TISSUE=Cartilage;
MEDIATE=9464689; PubMed=8245017;
MEDIATE=9464689; PubMed=8245017;
Hakala B.E., White C., Recklies A.D.;
"Human cartilage gp-39, a major secretory product of articular chondrocytes and synovial cells, is a mammalian member of a chitinase procein family.";
Uselol. Chem. 268:25803-25810(1993).
                                                                                                                                   228 PLFSLPEDPK-----SSAYAMNYWRKLGAPSEKLINGIPTYGRTFRLLKASKNGLQARA
                                                                                                                                                              301 KGMSPPGFISGEEGVLSYIELCOLF--QKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASI
                    PLYKR PDETDELHTY FNVNYTMHYYLNNGATRDKLVMGVPFYGRAWS I EDRSKLKLGDPA
                                                                                                                                                                                                                SCKLAFLKELGVSGVMVWSLENDDFKG-HCGP-KNPLLNKVHNMINGDEKNSFECILGPS
    128 DMAANPIYRQQFIQSVLDFLQBYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF
                                                        188 EPHG-----YILTAAVSPGKDKIDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Elochem. J. 269:265-268(1990).

-!- FUNCTION: May play an important role in the capacity of cells to respond to and cope with changes in their environment.
-!- SUBCELLULAR LOCATION: Extracellular.
-!- TISSUE SPECIFICITY: Present in articular chondrocytes, synovial cells as well as in liver. Undetectable in muscle tissues, lung,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIINE=90328983; PubMed=2375755;
Nyirkos P., Golds E.E.;
Heman synovial cells secrete a 39 kDa protein similar to a bovine mammary protein expressed during the non-lactating period.";
Biochem. J. 269:265-268(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rehli M., Krause S.W., Andressen R.; Molecular characterization of the gene for human cartilage gp-39 (CHIJLI), a member of the chitinase protein family and marker for late stages of macrophage differentiation."; Genomics 43:221-225(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-1994 (Rel. 29, Last sequence update)
10-02T-2003 (Rel. 42, Last annotation update)
Chitinase-3 like protein 1 precursor (artilage glycoprotein-39)
39) (39 kDa synovial protein) (YKL-40).
                                                                                                                                                                                                                                                                                                                                                  450 TVTPTKETVSLGKHTVALGEKTEITGAMTMTSVGHQSMTPGEKALTPV-GH 499
                                                                                                                                                                                                                                                                                                                         -------PAPTTSTPSPTTTEHTSETP--KYTTYVDGH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Blood;
MEDLINE=97386591; PubMed=9244440;
                                                                                                                                                                                                                                                                                                                                                                                                                                P36222; P30923;
01-JUL-1993 (Rel. 26, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
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                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is nn no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118 GWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYL 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 KTIYALLSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIED-IDPFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51 CTHIIYSFANI-----SNDHIDTWEWNDVTLYGMLNTLKNRNPNLKTLLSVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     178 ALVRELKDAF----EP--HGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232 WENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 CTHIMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRG---YERFNNIRLKNPELTTMISLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MIM; 601525; -. Governacellular matrix; TAS. GO; GO:0005578; C:extracellular space; TAS. GO; GO:0005578; C:extracellular space; TAS. GO; GO:0005201; F:extracellular matrix structural constituent; TAS. InterPro; IPR001223; Glyco hydro_18.
InterPro; IPR001223; Glyco hydro_18.
InterPro; IPR001579; Glyco_hydro_18.
Pfam; PR00704; Glyco_hydro_18; 1.
ProDom; PD000471; Glyco_hydro_18; 1.
ProDom; PD000471; Glyco_18; 1.
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pancreas, mononuclear cells, or fibroblasts.
PTM: Glycosylated.
SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
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N-LINKED (GLCNAC. . .) (Po
76ADD9298EEEC2D1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21.3%; Score 662; DB 1; 34.9%; Pred. No. 1.7e-29;
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                                                                                                                                                                                                                                                                                                                                                     21.1%; Score 654.5; DB 1; Length 623;
30.7%; Pred. No. 7.6e-29;
Live 87; Mismatches 200; Indels 121; Gaps
                                                                                                                                                                                                                  Verhage H.G., Fazleabas A.T., Mavrogianis P.A., O'Day-Bowman M.B., Donnelly K.M., Arias B.B., Jaffe R.C., "The baboon oviduct: characteristics of an oestradiol-dependent
                                                                                           Papio anubis (Olive baboon).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Papio.
         01-JUN-1994 (Rel. 29, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1999 (Rel. 38, Last amnotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                               Donnelly K.M., Fazleabas A.T., Verhage H.G., Mavrogianis P.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Glycoprotein; Fertilization; Signal. SIGNAL 1 21 BY SIMILARITY. CHAIN 22 623 OVIDUCT-SPECIFIC GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69291 MW; 9E21CE481FFF1268 CRC64;
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InterPro; IPR01223; Glyco_hydro_18.

InterPro; IPR01223; Glyco_hydro_188.

Pfan: PF00704; Glyco_hydro_18; 1.

ProDom; PD000471; Glyco_hydro_18; 1.

SMART; SM00636; Glyco_18; 1.
                                                                                                                                                                                                                                                                                                        PRELIMINARY PARTIAL SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                              oviduct-specific glycoprotein.";
Hum. Reprod. Update 3:541-552(1997).
                                                                                                                                                                                                        MEDLINE=98244335; PubMed=9584944;
                                                                                                                                                                                                                                                                                                                                 MEDLINE=91367180; PubMed=1716345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; M59903; AAB39765.1; -.
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402 4
441 4
623 AA;
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                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                 NCBI_TaxID=9555;
                                                                                                                                                                                                                                                                                                                    TISSUE=Oviduct
                                                                               OVGP1 OR OGP.
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FAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELITMISLGGWYEGSEKYS 127 FASMININGI ---VAKDLOD-----EKILYPEFNKIKERNRELKTLLSIGGWNFGTSRFT 108 128 DMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF 187

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109 TMLSTPANREKFIASVISLLRTHDFDGLDLFFLYPGLR-GSPWHDRWTFLFLIEELLFAF 167
                                                                                                                                                                                                                                                      PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
                                                                                                                                                                                                                                                                                                 301 KGMSPPGFISGEEGVLSYIELCQLF--QKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASI 358
                                                                                                                                                                                                                                                                                                                                                                                                                                     282 IGPASPGKYTKQAGFLAYFEICSFVWGAKKHW----IDYQYVPYANKGKEWVGYDDAISF 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            338 SYKAWPIRREHFGGAMVWTLDMDDVRGTFCGTGPFPLVYVMNDILVRAEFSSTSLPQFWL 397
                                                                                                              188 EPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNA 240
                                                                                                                                                             168 RKEALLTWRPRLLLSAAVSGVPHIVQTSYDVRFLGRLLDFINVLSYDLHGSWEKFTGHNS 227
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Search completed: March 22, 2004, 06:53:04 Job time : 23.2868 secs

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March 22, 2004, 06:39:53 ; Search time 111.679 Seconds (without alignments) 1568.003 Million cell updates/sec
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Gaps

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Query Match
Best Local Similarity 100.0%; Score 3107; DB 5; Length 555;
Best Local Similarity 100.0%; Pred. No. 2.9e-186;
Matches 555; Conservative 0; Mismatches 0; Indels 0.

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QBWTKO Q90W34 Q90W34 Q17411 Q23737 Q25042 Q25042 Q903B7 Q803B7 Q803B7 Q90B03 Q90PH2 Q9	PRT; 555 AA. 13, Created) 13, Last sequence update) 13, Last annotation update) 13, Last annotation update) 14, Last annotation update) 15, Last annotation update) 16, Last annotation update) 16, Last annotation update) 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 19, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 11, Astigmata; Psoroptidit 12, Astigmata; Psoroptidit 13, Astigmata; Psoroptidit 14, Astigmata; Psoroptidit 15, Astigmata; Psoroptidit 16, Astigmata; Psoroptidit 17, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 18, Astigmata; Psoroptidit 19, Astigmata; P
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65 YGFFGINE-DATVRIIDPYLDLEEN-WGRGHIKRFVGLKNVGPGLKTLAAIGGWNEGSRK 122
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Han J.H., Kim S.R., Sohn H.D., Jin B.R.;
"Molecular cloning of a cDNA encoding the chitinase from the spider,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----DG---DCAGGRYGFVPHPTNCARYYICLTADTYYEFT
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Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Araneidae; Araneus.
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Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AY120879; AAN39100.1; -.
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Last sequence update)
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93; Mismatches 187;
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Pfam; PF01607; CBM 14; 1.
Pfam; PF00704; Glyco hydro 18; 1.
ProDom; P0000471; Glyco hydro 18; 1.
SWART; SW00494; ChtBD2; 1.
SWART; SW00636; Glyco 18; 1.
PR0SITE; PS01095; CHTINASE 18; 1.
Glycosidase; Hydrolase.
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Lu Biol. Chem. 722:28895-28900 (1997).

E Bibl. AF008575; AAB87764.1;

R GO; GO:0008575; AAB87764.1;

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0008075; P:carbohydrate metabolism; IEA.

R GO; GO:0006375; P:carbohydrate metabolism; IEA.

R GO; GO:0006307; P:chitin metabolism; IEA.

R GO; GO:0006307; P:chitin metabolism; IEA.

R GO; GO:0006307; P:chitin metabolism; IEA.

R GO; GO:0006307; P:chitin metabolism; IEA.

R GO; GO:0006307; P:chitin metabolism; IEA.

R InterPro; IPR001223; Glyco_hydro_18.
                                                                                                                                        CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELTTMISLGGWY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KLAFLKELGVSGVMVMSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
                                                 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
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                                                                                                                                                                                                     EGSEKYSDMAANPTYROOFIOSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALV
                                                                                                                                                                                                                                                                                               RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
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Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea, Anopheles.
NCBI_TaxID=7165;
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Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shen Z., Jacobs-Lorena M.,
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AGCHI-1.
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Gaps

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.057 PTRPPTS------TTPETTRRPSTTTSTRRTTMTTTT--TTTRRPTTTTRRRTSAR 1104
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 DRLVIK------PHDSWADIDNRFYERVVEYKKKGKKVT--VAIGGWNDSAGDKYSRL 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130 AANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPK----IDKQNYLALVRELKD 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          246 PDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSP 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306 PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAF 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          937 AGESTRARGFLSYYEICANIRNKKWTVARDRKGRMGPYAYKGDQWVSFDDQYMIRHKSEY 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365 LKELGVSGVMVWSLENDDFKGHCG~PKNPLLNKVHNMINGDEKNSFECIL--GPSTTTPT 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              186 AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1105 PIYITI----NVPSYQEIANEVDEPICTDGRLF-----VPHPTDCNKYYICQYGK---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482 PSPTTTEHTSETPKY-----TTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                on glycosyl bonds; IEA
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N-LINKED (GLCNAC. . . ) (POTENTIAL).
N-LINKED (GLCNAC. . . ) (POTENTIAL).
N-LINKED (GLCNAC. . . ) (POTENTIAL).
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N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . . ) (POTENTIAL).
N-LINKED (GLCNAC. . . ) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                     84;
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1635;
                                                                                                                                                                                    PROSITE; SAUU636; Glyco 18; 3.
Hydrolae; Glycosidase; CHITINASE 18; 3.
Multigene family.
Multigene family.
CARBOHYD 192 19?
                                                                                                                                                                                                                                                                                                                                                                                                                                                    95; Mismatches 196; Indels
                                                                                                                                                                                                                                                                                                                                                                                      1635 AA; 185993 MW; EA116F83AAC129FA CRC64;
GO, GO:0005576; C:extracellular; IEA.
GO; GO:0008061; F:chitin binding; IEA.
GO; GO:0008061; F:chitin binding; IEA.
GO; GO:0008043; F:chitin binding; IEA.
GO; GO:0005032; P:chitin catabolism; IEA.
GO; GO:0005032; P:chitin catabolism; IEA.
InterPro; IPR00123; Glyco hydro 18.
InterPro; IPR00123; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PF01704; Glyco hydro 18; 3.
Pfam; PF000491; Glyco hydro 18; 3.
ProDom; PF000491; Glyco hydro 18; 3.
SMART; SM00494; CheBD2; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                     28.0%; Score 869; DB 5; 34.3%; Pred. No. 8.3e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                      DB 5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 196; Conservative
                                                                                                                                                                                                                                                                          192
322
463
749
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1338
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CARBOHYD
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                                                                                                                                                                                                                                                                                                           PHGYLLTAAVSPGKDKIDRAYDIKELNRLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDE 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
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                                                                                                                                                                                                                                                                                                                                                                                                                                             182 PHGLLLSAAVSAGKNTIDTAYDIPGVAKYLDFINVMAYDLHGSWEKTAGHNAPLYERPGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242 -PESDKILNVDYAINYWIKNGTPKNKVILGMGTYGRSFTLANAANNGLGAATTGPGSAGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12 ACIGLM--NASIKRDHNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGF
                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INSECT MOI. Biol. 7:233-239(1998).
-!- CATALYTIC ACTIVITY: HYDROLYSIS OF THE 1,4-BETA-LINKAGES OF N-ACETYL-D-GLUCOSAMINE POLYMERS OF CHITIN.
-!- SIMILARITY: BELONGS TO CHITINASE CLASS II (FAMILY 18 OF GLYCOSYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryotā; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Aedes.
NCBI_TaxID=7159;
                                                                                                                                                                                            26;
                                                                                                                                                          30.3%; Score 942; DB 5; Length 431; 43.6%; Pred. No. 4.6e-51; ive 78; Mismatches 135; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Robbins P.W.;
in Aedes, Anopheles
                                                                                                                             47238 MW; 929439397B9BC923 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1998 (TrEMBLrel. 05, Created)
1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last annotation update)
Probable chitinase 2 (EC 3.2.1.14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
InterPro; IPR001223; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_188.
InterPro; IPR001579; Glyco_hydro_18AS.
Pfam; PF00704; Glyco_hydro_18; 1.
SMART; SM00636; Glyco_18; 1.
PROSITE; PS01095; CHITINASE 18; 1.
SEQUENCE 431 AA; 47238 MW; 929439397B9EC92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1635 AA
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MEDLINE=98324849; PubMed=9662472;
de la Vega H., Specht C.A., Liu Y.,
"Chitinases are a multi-gene family
Drosophila.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aedes aegypti (Yellowfever mosquito)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF026492; AAB81850.1;
PIR; T14075; T14075.
                                                                                                                                                                            Local Similarity 43.6
nes 185; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404 OPTT 407
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01-MAR-2001
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Flyamase; FR950030171; CG2989.
GG9: GO:0005576; C:extracellular; IEA.
GO; GO:0008061; F:chitin binding; IEA.
GO; GO:0016798; F:hydrolase activity, acting on glycosyl bonds; IEA.
GO; GO:0016798; P:carbohydrate metabolism; IEA.
GO; GO:0006975; P:carbohydrate metabolism; IEA.
GO; GO:0006030; P:chitin metabolism; IEA.
                                                                                                                           Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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                                              Last sequence update)
Last annotation update)
 PRI; 4498 AA.
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InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PF01607; CBM 14; 1.
Pfam; PF01607; CBM 14; 1.
Pfam; PF01607; Glyco hydro 18; 1.
                                 Created)
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SMART; SW00636; Glyco_18; 1.
SMOSITE; PS01095; CHITINASE_18; 1.
Glycosidase; Hydrolase.
SEQUENCE 4498 AA; 493096 MW; AI
                                                                                                              Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                           MEDLINE=20196006; PubMed=10731132;
                            01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-OCT-2003 (TrEMBLrel. 25,
 PRELIMINARY;
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                                                                                                                                                                          NCBI TaxID=7227;
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                                                                                 CG2989 protein.
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                                                                                                     2 KTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYH----KVDPYTIEDID 57
                                                                                                                                         490 ISETPKYTTYVDGHLIKCYKEGDIPHPINIHKYLVCEFVNG----GWWVHIMPCPPG 542
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Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
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                                                                                                                                                                                                               PFKCTHIMY - - - GFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMI
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MEDLINE=20545518; PubMed=10984462;
Mikitani K., Sugasaki T., Shimada T., Kobayashi M., Gustafsson J.A.;
Mikitani K., Sugasaki T., Shimada T., Kobayashi M., Gustafsson J.A.;
Mikitani K., Sugasaki T., Shimada T., Kobayashi M., Gustafsson J.A.;
Like Transposable Element.";
J. Biol. Ghem. 275:37725-37732 (2000).
Biol. Ghem. 275:37725-37732 (2000).
GO; GO:0005576; C:extracellular; IEA.
GO; GO:0006061; F:chitin binding; IEA.
GO; GO:0006061; F:chitin metabolism; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
27.5%; Score 854.5; DB 5; Length 4498;
33.8%; Pred. No. 2.2e-44;
Live 88; Mismatches 188; Indels 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   479 RPAVSSTOAPP--PSTTFKLITEAEGSSLYIGGRASTTPPPPTTPDP
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Last annotation update)
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                                                     88;
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                                                        Conservative
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1979 -----FDNKFYEKVTAFKAKG--IKVLIAIGGWNDSAGDKYSRLVNNPSSRRRFIAHVVD 2031
The Movel putative insect Chitinase with multiple catalytic domains:

"In bormonal regulation during metamorphosis.";

"Submitted (MAY-2002) to the EMEL/GenBank/DDBJ databases.

"BMBJ, AJ487081; CAD3140.4;

"BMBJ, AJ487081; CAD3140.4;

"BMBJ, AJ487081; CAD3140.4;

"BMBJ, AJ487081; CAD3140.4;

"BMBJ, AJ487081; CAD3140.4;

"GO; GO:000861; Fichtin binding; IEA.

"GO; GO:000861; Fichtin binding; IEA.

"GO; GO:0006520; Pamino acid metabolism; IEA.

"GO; GO:0006530; Pamino acid metabolism; IEA.

"GO; GO:0005575; Parabohydrate metabolism; IEA.

"GO; GO:0005575; Parabohydrate metabolism; IEA.

"GO; GO:0005575; Parabohydrate metabolism; IEA.

"GO; GO:0005575; Chitin bind PerA.

"R InterPro; IPR001223; Glyco_hydro_188.

"R InterPro; IPR001579; Glyco_hydro_189.

"ProDom; PD000411; Glyco_hydro_18; S.

"ProDom; PD000411; Glyco_hydro_18; S.

"PROSTTE; PS00165; DHYDRATASE_SER_THR; 1.

"SMART; SM00643; Glyco_18; S.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

"SMART; SM00643; Glyco_185.

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"SMART; SM00644; Glyco_185.

"SMART; SM00644; Challed.

"SMART; SM00644; Challed.

"SMART; SM00644; Glyco_185.

"SMART; SM00644; Challed.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31 NP---MRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE 2838 AA; 321407 MW; 608B3F2A8E98B9B7 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107 WARGGSKYSHWVAQKSTRMSFIRSVVDFLKKYDFDGLDLDWEYPGAADRGGSFSDKDEFL 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DICTHLIYSFIGVTEKSSEVLIIDPELD-----UDKSGFRNFTSLRSKHPDVKFMVAVGG 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167 YFVQELKRAFIRADRGWELTAAVPLANFRLMEGYHVPELCQELDAIHVMSYDLRGNWAGF 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YGHNAPLYKRPDETDELHTYFNVNYTWHYYLNNGATRDKLVMGVPFYGRAMSIED----- 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227 ADVHSPLYKRPHD-QWAYEKLAVANGLANIMEEKGCPTNKLVVGIPFYGRSFTLSAGNNNY 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  286 GLGTYINKEAGGGDPAPYTNATGF-----WAYYEICTEVDADGSGWTKKWDEFGKCPY 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  339 AYKGTOWVGYEDPRSVEIKOMWIKEKGYLGAMTWAIDMDDPKGLCGEENPLIKLLH---- 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GDEKNSFECILGPSTT -- TPTPTTTPTTTTPTTTPSPTTTPSPTTTPSPTTTPSPTTP 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITPSPITTPIPTPTPAPTISTPSPITTEHTSETPKYTTYVDGHLIKCYKEGD-IPHPTN 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 446 RTTARPT--TTTTKVPHGTTEEDFDINVRPEVEEPPTENBVDNADV-CNSEDDYVPDKKE 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALVRELKDAF -- EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMVWTYDYHGGWENF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         64;
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                                                                                                                                                                                                                                                                                                                                              Length 544;
                                                                                                                                                                                                                                                                                                                                                                                                      78; Mismatches 218; Indels
      InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco_hydro_18AS.
Pfam; PF00104; CBM 14; 1.
Prodom; PF0010471; Glyco_hydro_18; 1.
Prodom; PR00171; Glyco_hydro_18; 1.
SMART; SM00494; ChtBD2; 1.
SMART; SM00636; Glyco_18; 1.
SPOSITE; PS01095; CHTTINASE_18; 1.
Glycosidase; Hydrolase.
SEQUENCE 544 AA; 61069 MW; 89872DFC1DA23753 CRC64;
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                              Score 847; DB 5;
Pred. No. 5.2e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CSKYWRC--VNGEGVQ--FSCOPGTIF 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
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Royer V., Fraichard S., Bouhin H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2002 (TrEMBLrel. 22, Create 01-OCT-2002 (TrEMBLrel. 22, Last s 01-OCT-2003 (TrEMBLrel. 25, Last a Chitinase precursor (EC 3.2.1.14). CHITS.
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                                                                                                                                                                                                                                                                                                                                              27.3%;
36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 207; Conserv
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339 AYKGTOWYGYEDPRSVEIKWIWIKEKGYLGAMTWAIDWDFKGLCGEENPLIKLIHKHMS 398
                                                                                                                                                                                                                                                                                                                         445 TRITARPIT------TITKVPHGTTEEDFDINVRPEVEELPT-ENEVDNADV-CNSE 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92 WEKRGYERFUNLRLKNPELTTMISLGGWYEGSEKYSDWAANPTYRQQFIQSVLDFLQEYK 151
GYNDKIWYGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --KCAYDRFTALKQQNANLKALLAVGGWNEGSPKYSKWAADPALRNRFITSSIELLKKHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35 IVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQD--DNHNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 FDGLDMDWEYPTQRGGSPD-DYDNFALLMAELKQALQPEGMLLTAAVSAGKATIDPAYNV
                                                                                                                                                                                                     ------TYTVPPARTGHTTPTPEWARP-PSTPSDPSEGDPIPTTTTTVKPTT
                                                                                                                                                                                                                                                                     459 PTTTPSPTTPTPTPTPAPTTSTPSPTTTE-----HTSETPKYTTYVDGHLIKCYKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                         GDEKNSFECILGPSTTTPTPTTTTTTTTTTTPTTPSPTTPTT----TPSPTTPTTPSPTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

Watenabe T., Kono M., Aida K., Nagasawa H.;

Watenabe T., Kono M., Aida K., Nagasawa H.;

Watenabe T. Kono M., Aida K., Nagasawa H.;

hepatopancreas of the penaeid prawn Penaeus japonicus.";

Biochim. Biophys. Acta 0:0-0(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota, Metazoa, Arthropoda, Crustacea, Malacostraca,
Bumalacostraca, Bucarida, Decapoda, Dendrobranchiata, Penaeoidea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85;
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GO, GO:000576; C:extracellular; IEA.
GO, GO:000678; F:chitin binding; IEA.
GO, GO:000678; F:chitin binding; IEA.
GO, GO:000597; P:carbohydrate metabolism; IEA.
GO; GO:000597; P:carbohydrate metabolism; IEA.
InterPro; IPR00123; Glyco hydro 18.
InterPro; IPR00123; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
InterPro; IPR00167; Glyco hydro 18.
InterPro; IPR00167; Glyco hydro 18.
InterPro; IPR00167; Glyco hydro 18.
InterPro; IPR00167; Glyco hydro 18.
InterPro; IPR00199; Glyco hydro 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
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InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
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InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR00199; CHITINASE 18.
InterPro; IPR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                  GD-IPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIW 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.0%; Score 837.5; DB 5; 34.8%; Pred. No. 1.7e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85; Mismatches 173;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          467 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AB008027; BAA22854.1; -
HSSP; P07254; 1CTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 05, C (TrEMBLrel. 05, I (TremBLrel. 25, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 183; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
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01-JAN-1998 (
01-OCT-2003 (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLGTYINKEAGGGDPAPYINATGF------WAYYBICTEVDADGSGWIKKWDEFGKCPY 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59 FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLCTHILYSFIGVTEXSSEVLIIDPELD-----VDKSGFRNFTSLRSKHPDVKFWVAVGG 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALVRELKDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMVVMTYDYHGGWENF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             167 YFVQELKRAFIRAGRGWELTAAVPLANFRLMEGYHVPELCQELDAIHVMSYDLRGNWAGF 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADVHSPLYKRPHD-QWAYEKLNVNDGLNLWEEKGCPTNKLVVGIPFYGRSFTLSAGNNNY 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WYEGSEKYSDMAANPTYRQOFIOSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKONYL 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                  Bombyx mori (Silk moth).
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Lepidoptera, Glossata, Ditrysia, Bombycoidea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
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Abdel-Banat B.M.A., Koga D.;
"Alternative mRNA splicing generates heterogeneity within Bombyx mori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene for chitinase.";
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF455139; AAL51080.1;
-GO; GO:0008576; C:extracellular; IEA.
GO; GO:000861; F:chitin binding; IEA.
GO; GO:0008843; F:chitin binding; IEA.
GO; GO:0008843; F:chitin binding; IEA.
GO; GO:0008975; P:carbohydrate metabolism; IEA.
GO; GO:000575; P:carbohydrate metabolism; IEA.
GO; GO:000575; Chitin metabolism; IEA.
InterPro; IPR0012257; Chitin bind PerA.
InterPro; IPR0012257; Chitin bind PerA.
InterPro; IPR001229; Glyco_hydro_18.
InterPro; GO; GO:000575; Chitin bind PerA.
InterPro; GO; GO:0007287; Chitin bind PerA.
InterPro; GO; GO:0007287; Chitin bind PerA.
InterPro; GO; GO:0007287; Chitin bind PerA.
InterPro; GO; GO:000787; Chitin bind PerA.
InterPro; GO; GO:000787; Chitin bind PerA.
InterPro; GO; GO:000787; Chitin bind PerA.
InterPro; GO; GO:000787; Chitin bind PerA.
InterPro; GO:00787; Chitin Bind PerA.
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InterPro; GO:00787; Chitin Bind PerA.
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InterPro; GO:00787; Chitin Bind PerA.
InterPro; GO:00787; Chitin Bind PerA.
InterPro; GO:00787; Chitin Bind PerA.
InterPro; GO:00787; Chitin Bind PerA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43FC717B3F6917D0 CRC64;
                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
CHITINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfan, PF01607; CBM 14; 1.
Probon, PP00704; Glyco hydro 18; 1.
Probon, PD00041; Glyco hydro 18; 1.
SWART; SW00494; ChrBD2; 1.
SWART; SW00636; Glyco 18; 1.
SWART; SR01095; CHITINASE 18; 1.
Signal; Hydrolase; Glycosidase.
Signal
                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                               01-MAR-2002 (TrEMBLrel. 20, Create 01-MAR-2002 (TrEMBLrel. 20, Last s 01-OCT-2003 (TrEMBLrel. 25, Last a Chiinase precursor (EC 3.2.1.14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      566 AA; 63465 MW;
                 2499 VLDGSTMTLKPHDSW 2513
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                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bombycidae; Bombyx.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
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Q8WR52;
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284

337

225 290 492

Bombyx mori:

458 443 510

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338 AYKGTQWVGYEDPRSVEIKOMWIKEKGYLGAMTWAIDMDDFKGLCGEENPLIKLLHRHMS 397
                                                                                                                                                                                                                                                                                                       291 -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY 342
                                                                                                                                                                                                                                                                                                                                                                               343 GYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMIN 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
NCBI_TaxID=7091;
                     51 DLCTHLIXSFIGVTEKSSEVLIIDPELD-----VDKSGFRNFTSLRSKHPDVKFMVAVGG
                                                                                           106 WAEGGSKYSHWVAQKSTRMSFIRSVVDFLXKYDFDGLDLDWEYPGAADRGGSFSDKDKFL
                                                                                                                                                                         226 ADVHSPLYKRPHD-QWAYEKINVNDGLNLWEEKGCPTNKLVVGIPFYGRSFTLSAGNNNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              398 -----THIVPPARIGHTTPIPBWARP-PSIPSEGDPIPITITIVKPTT
59 FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYBRFNNLRLKNPELTTMISLGG
                                                                         119 WYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL
                                                                                                                                                   178 ALVRELKDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENF
                                                                                                                                                                                                                             236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                          285 GLGTYINKEAGGGDPAPYTNATGF-----WAYYEICTEVDADGSGWTKKWDEFGKCPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459 PTTTPSPTTPTPTTPTPAPTTSTPSPTTTE-----HTSETPKYTTVVDGHLIKCYKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       444 TRTTARPTT-----TTTKVPHGTTEBDFDINVRPEVEELPT-ENEVDNADV-CNSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           403 GDEKNSFECILGPSTTTPTPTTPTTPTTPTTPSPTTPTT----TPSPTTPTTTPSPTT
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N 141

SEQUENCE FROM N.A.

STRAIN=Kinshu X Showa hybrid; TISSUS=Integument;

X MEDINE=21124800; PubMed=11222960;

A Abdel-Banat B.M.A., Koga B. 1222960;

T. "A genomic clone for a chitinase gene from the silkworm, Bomb genotic clone for a chitinase gene from the silkworm, Bomb in structural organization identifies functional motifs.";

Insect Blodward Clone Mol. Biol. 31:497-508(2001).

R EMBL; AB048355; BAB13481.1;

R GO; GO:0005576; C:extracellular; IEA.

R GO; GO:000661; F:chitin binding; IEA.

R GO; GO:0008843; F:endochitinase activity; acting on glycosyl bon GO; GO:0006030; P:chitin metabolism; IEA.

BR GO; GO:0006030; P:chitin metabolism; IEA.

BR InterPro; IPR001253; Glyco_hydro_188.

InterPro; IPR001253; Glyco_hydro_1885.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2001 (TrEMBLrel. 16, Last sequence update) 01-OCT-2003 (TrEMBLrel. 25, Last annotation update) Chitinase precursor (EC 3.2.1.14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            511 GD-IPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIW 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   493 DDYVPDKKECSKYWRC--VNGEGVO--FSCOPGTIF 524
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last seq
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Pfam; PF00704; Glyco hydro 18; 1.
ProDom; PD000471; Glyco hydro 18; 1.
SMART; SM00494; ChtBD2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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                                        234 RPGQIALGIPLYGRCWTLASQQETGXXAPAHQPGAAGDWTKSPGMLGYNBICYMQTTQDW 293
                                                                                                                388 GPKNPLLNKVHNMINGDEKNSPECILGPSTTTPTTTTTTTTPTTTPSPTTTTTPSP 447
                 TRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEW 330
                                                                                         331 HIQYDEYYNAPYGY---NDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHÇ 387
                                                                                                                                                                                                                                               448 TIPTITESPITIPITIESPITPIPIPAPITISTPSPITTEHISBIPKYTTYVDGHLIKC 507
                                                                                                                                                                                                                                                                                   377 ------PPLPTTRDPSEPTTTRAPPP----PG----------PTC 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. Showa; TISSUE=Integument; STRAIN=Kinshu x Showa; TISSUE=Integument; Abdel-Banat B.M., Koga D.; Modecular cloning of Bombyx mori chitinase cDNA; a unique insert of 9 base pairs reduced the apparent molecular mass of the encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
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1 MRAIFATLAVLASCAALVQ-----SDSRARIVĊYFSNWAVYRPGVGRYGIBDIPV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               543;
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EMBL; AB052914; BAB20017.1;

EMBL; AB052914; BAB20017.1;

EMGC; GO:0005576; C:extracellular; IEA.

GO; GO:000576; F:chitin binding; IEA.

GO; GO:0016843; F:endcohitLularse activity; IEA.

GO; GO:00168798; F:hydrolase activity; acting on glycosyl bor GO; GO:0016975; P:rotrohydrate metabolism; IEA.

R GO; GO:0016975; P:carbohydrate metabolism; IEA.

R InterPro; IPR001223; Glyco_hydro_18.

R InterPro; IPR001223; Glyco_hydro_18.1.

R Pfam; PF00107; Glyco_hydro_18; 1.

R Pfam; PF00107; Glyco_hydro_18; 1.

R SMART; SM00494; Glyco_hydro_18; 1.

R SMART; SM00494; Glyco_hydro_18; 1.

R PROSITE; PS01095; GHYTO_NATO_18; 1.

R PROSITE; PS01095; GHYTO_NATO_18; 1.
                                                                                                                                                                                                                                                                                                                      508 YKEGDIPHPINIHKYLVCEF-VNGGWWVHIMPCPPGTIWCQEKLTC 552
                                                                                                                                                                                                                                                                                                                                                404 TILGINPDPIDCTHYYLCSINTSGGFDEKEEVCPEGTLFNPQSFYC 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.0%; Score 837.5; DB 5; Length 35.9%; Pred. No. 2.1e-44; ive 78; Mismatches 208; Indels
                                                                                                                                                                                          H-----NRKYHLI ----KTMVEVFGGGSITEP------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-WAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Chilinase precursor (EC 3.2.1.14)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           543 AA
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Matches 207; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
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Bombyx mori (Silk moth)
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NCBI_TaxID=7091;
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Best Local S
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Q9VFR3
AC Q9VFR
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DT 01-MA
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GN CG930
OS DFOSO
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                                                                                                                                                                                         FKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGG 118
                                                                                                                                                                                                                                                                                                                                                                 284
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          338 AYKGTOWVGYEDPRSVEIKAAWIKEKGYLGAMIWAIDMDDFKGLCGEENPLIKLLHKHMS 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    444 TRTTARPTT------TTTKVPHGTTEBDFDINVRPEVEBLPT-ENEVDNADV-CNSE 492
                                                                                                                                                                                                                                        WYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL 177
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                                                                                                                                                      WAEGGSKYSHWVAQKSTRMSFIRSVVDFLKKYDFDGLDLDWEYPGAADRGSFSDKDKFL
                                                                                                                                                                                                                                                                                                                                         236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                                       285 GLGTYINKEAGGGDPAPYTNATGF-----WAYYBICTEVDADGSGWTKKWDEFGKCPY
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                                                                                                                                        1 MKTIYAILSIMA-CIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDP
                                                                                                                                                                                                                                                                                        ALVRELKDAF -- EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENF
                                                                                                                                                                                                                                                                                                                166 YFVQELKRAFIRAGRGWELTAAVPLANFRLMECYHVPELCQELDAIHVMSYDLRGNWAGF
                                                                                                                                                                                                                                                                                                                                                                                         -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=98318808; PubMed=9654739; Kim M.G., Sark H.Y.; Kim M.G., Shin S.W., Bae K.S., Kim S.C., Park H.Y.; "Molecular cloning of chitinase cDNAs from the silkworm, Bombyx mori and the fall webworm, Hyphantria cunea."; Insect Biochem. Wol. Biol. 28:163-171(1998).
                                                                                      27.0%; Score 837.5; DB 5; Length 543;
larity 35.9%; Pred. No. 2.1e-44;
Conservative 78; Mismatches 208; Indels 83
                                                  21 543 CHITINASE.
543 AA; 60982 MW; DE29675D83AEC2EF CRC64;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            565 AA
                                       POTENTIAL
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               18; 1.
SMART; SM00636; Glyco 18; 1.
PROSITE; PS01095; CHITINASE_18
Glycosidase; Hydrolase; Signal
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Bombyx mori (Silk moth)
                                                                                                  Local Similarity
tes 207; Conserv
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                                                              SEQUENCE
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459 PITTPSPTTPTPTPTPAPTTSTPSPTTTE-----HTSETPKYTTYVDGHLIKCYKE 510
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 WYEGSEKYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178 ALVRELKDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            236 YGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 226 ADVHSPLYKRPHD-QWAYEKINVNDGLNLWEEKGCPTNKLVVGIPFYGRSFTLSAGNNNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE--EWHIQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             885 GLGTYINKEAGGGDPAPYINATGF-----WAYYBICTBVDADGSGWTKKWDEFGKCPY
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GO; GO:0005576; C:extracellular; IEA.

GO; GO:0008061; F:chitin binding; IEA.

GO; GO:0008061; F:chitin binding; IEA.

R GO; GO:0005975; P:carbolydrate metabolism; IEA.

GO; GO:0005975; P:carbolydrate metabolism; IEA.

R InterPro; IPR001257; Chitin bind PerA.

R InterPro; IPR001257; Chitin bind PerA.

R InterPro; IPR001579; Glyco_Hydro_18.

R InterPro; IPR001579; Glyco_Hydro_18.

R Prodon; PD00041; Glyco_Hydro_18; 1.

R Prodon; D00041; Glyco_Hydro_18; 1.

R SWART; SW00494; ChtBD2; 1.

R SWART; SW00636; Glyco_18; 1.

R PROSITE; PS01095; CHITINASE_18; 1.

R PROSITE; PS01095; CHITINASE_18; 1.

R SEQUENCE 565 AA; 63394 MW; 77D26D014875F3E2 CRC64;
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(01-MAY-2000 (TYENBLEEL: 13, Created)
01-MAY-2000 (TYENBLEEL: 13, Last sequence update)
01-OCT-2003 (TYENBLEEL: 25, Last annotation update)
CG9307 protein (LP08894P).
CG9307.
Drosophia melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
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35.9%; Pred. No. 2.2e-44;
rive 78; Mismatches 208; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    207; Conservative
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Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeilffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
                                                                                                                                                                         23 SDQASRIVCYFSNWAVYRTGIGRYGLEDVPADLCTHIIYSFIGWNDKSWDVLVIDPELD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256 LWEEMGCPANKLVVGVPFYGRTFTLSNSNKNYNMGTYINKEAGGGAPGPYTNASGFLAYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           484 TTTTTTTTPAP---EKSTEEPEEVVYPVDPVEPTDPEQPMGPQFDPNEIDCTNRDFVPHP
                                                                                                                                                                                                                                                                       88 NHNSWEKRGYERFINNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL
                                                                                                                                                                                                                                                                                                                                                                                                           QEYKEDGLDLDWEYPGS--RLGNPKIDKQNYLALVRELKDAF--EPHGYLLTAAVSPGKD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264 YYLNNGATRDKLVMGVPFYGRAWSIEDRSK-LKLG---DPAKGMSPPGFISGEEGVLSYI
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                                                                 Gaps
                                                                 87;
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Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera; Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, brosophila.
NCBI_TaxID=7227;
   Length 595;
                                                                 Indels
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Last sequence update)
Last annotation update)
27.0%; Score 837.5; DB 5; 35.2%; Pred. No. 2.3e-44; ive 84; Mismatches 199;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541 -NCRKYFRC------VHGKPVEFECKEGT 562
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01-MAY-2000 (TrEMBLrel. 13,
01-OCT-2003 (TrEMBLrel. 25,
                                                                        201; Conservative
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Best Local S
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Q9W2M7
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235 QQQLMVDAVVKYWLKAGAPAEKLILGVPFYGRSFTLATAEGNQPGAPHIGKGIAGNYSRE 294
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                     550 LTC 552
                                                                                                                                                                                                                                                                                                                                                                                                                          450 KSC 452
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01-MAR-2003
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chang R.C.;
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RA BOrkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Gherry J.W., Cawley S., Dahlke C., Davengort L.B., Davies P.,
RA Cherry J.W., Cawley S., Dahlke C., Davengort L.B., Davies P.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
A Dodson K., Doup L.E., Downes M., Dugan Rocha S., Dunkov B.C., Dunn P.,
RA Dolbrin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Lei Y., Evriers G., Karpen G.H., Re Z., Kamle D., Lai Z.,
Rake P., Lei Y., Levitsky A.A., Lid J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLedd M.P., McPherson D.,
RA Mount S.M., My M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Palazzolo W., Pittman G.S., Pan S., Pollard J., Puri V., Rese M.G.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Strong R., Smith T.,
RA Shue E.C., Siden-Kiamos I., Simpson M., Strong R., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Kenner R.W., Zhong F.W., Zhon M., Zhon K., Zhon K., Smith H.O.,
RA Kenner R.W., Mers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Myers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Wers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Wers E.W., Rubin G.M., Venter J.C.;
RA Scheng X.H., Wenter J.C.;
RA Scheng X.H., Reminger R.W., Rubin G.W., Venter J.C.;
RA Scheng X.H., Reminger R.W., Rubin G.W., Scheele J.M., R.,
R. Schence Z.1958(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175 AAVGSAQFSAEISYDIPAMVPYLDLINVMAYDLHGPWDQVVGINAPLYAAEKDASDSSGR 234
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R GO; GO:000576; C:extracellular; IEA.

R GO; GO:000576; C:extracellular; IEA.

R GO; GO:000576; P:chttin binding; IEA.

R GO; GO:000575; P:chttin metabolism; IEA.

R GO; GO:0006975; P:chttin metabolism; IEA.

R GO; GO:0006975; P:protein folding; IEA.

R GO; GO:0006975; P:protein folding; IEA.

R InterPro; IPR001179; REAP_PFIASE.

R InterPro; IPR001123; Glyco_hydro_18.

R InterPro; IPR00123; Glyco_hydro_18.

R InterPro; IPR00143; Glyco_hydro_18.

R Pfam; PF01067; CBM 11.

R ProDom; PD000471; Glyco_hydro_18; 1.

R SMART; SM00636; Glyco_hydro_18; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51055 MW; 8EF4F126F1DD8D9B CRC64;
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PROSITE; PS01095; CHITINASE_18; 1.
PROSITE; PS00453; FKBP_PPIASE_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE003452; AAF46663.1; -.
HSSP; P07254; 1CTN.
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SEQUENCE 460 AA; 510
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59 --KCAYDRFTALKQQNANIKAILAVGGWRGSPKYSKMAADPVLRNRFITSSIELLKKHG 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 400 ESPSEGFSCPADA-----PAGYIRDPDNCSKFYYC----SGGKTHNFDCPSGLNFDLDT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .52 FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDI 211
                                                                      354
                                                                                                                                             373 VMVWSLENDDFKGHCGPK-NPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTT 431
                                                                                                                                                                                                                                                                                       -----NTPSGLTTESNR 399
                                                                                                                                                                                                                                                                                                                                                                                                                                        492 ETPK--YTTYVDGHLIKCYKEGDIPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIMCQEK 549
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"Cloning and characterization of a cDNA encoding a chitinase from hepatopancreas of the Penaeus vanameii (Crustacea, Decapoda).";

Submitted (OCT-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF115689; AAN14647.1; -
EMBL; AF115689; AAN14647.1; -
EMBL; AF115689; AENTACOTILIAT; IEA.

GO; GO:0008576; C:extracellular; IEA.

GO; GO:0008576; F:chitin binding; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

R O; GO:0005975; P:carbohydrate metabolism; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

EN InterPro; IPR001223; Glycohydro-18AS.

R InterPro; IPR00123; Glycohydro-18AS.

R Pfam; PF016704; Glycohydro-184; 1.

R Pfam; PF016704; Glycohydro-18; 1.

R Probom; PR000471; Glycohydro-18; 1.

R SMART; SM00494; ChtBD2; 1.

R SMART; SM00636; Glyco-18; 1.

R SMART; SM00636; Glyco-18; 1.

R SMART; SM00636; GHYCO-18; 1.
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EGVLSY1ELCQLFQKEEWH1QYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSG
                                            295 PGVLGYNELCEMMEREEWTQKWEATQQVPYAYRQRQWVGYEDPRSLALKAQYVWDNHLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Penaeus vannamei (Penoeid shrimp) (European white shrimp).
Eukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;
Eumalacostraca; Eucarida; Decapoda; Dendrobranchiata; Penaeoidea;
Penaeidae; Litopenaeus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 23, Created)
(TrEMBLrel. 23, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
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212 KELNKLFDMMNVMTYDYHGGWENFYGHNAPLYKRP-DETDELHTYFNVNYTWHYYLNNGA 270
                                                                      271 TRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEGVLSYIELCQLFQKEEW 330
                                                                                                                                  234 RPGQIALGIPLYGRCWILASQQETGYYAPAHQPGAAGDWTRSPGMLGYNEICYMRTTQDW 293
                                                                                                                                                                              331 HIQYDEYYNAPYGY---NDKIWVGYDDLASISCKLAFLKELGVSGVWWSLENDDFKGHC 387
                                                                                                                                                                                                  388 GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTTPTTTPSPTTPTTTPSP 447
                                                                                                                                                                                                                                                                 354 H-----NRKYELI----KIMVEVFGGGSITEP------376
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                                                                                                                                                                                                                                                                                                                                            ----- VHC 403
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Search completed: March 22, 2004, 06:59:24 Job time : 113.679 secs us-09-662-293-15.rag

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March 22, 2004, 06:30:23 ; Search time 168.752 Seconds (without alignments) 929.256 Million cell updates/sec
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3107
1 MKTIYALLSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE 555
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                              1586107 seqs, 282547505 residues
                                                                               OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Perfect score:
Sequence:
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0 Maximum DB seq length: 200000000

A Geneseq 29Jan04:*

1: geneseq11980s:*
2: geneseq11990s:*
3: geneseq12000s:*
5: geneseq12001s:*
6: geneseq12003s:*
7: geneseq12003bs:*
8: geneseq12003bs:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Aay52523 House dus	Aau96327 Der HMW-m	Aau96328 Der HMW-m	Aay52525 House dus	Aau96329 Der HMW-m	Aay52533 D. pteron	7 D	Aau96338 Der HMW-m	Aay52535 D. pteron	Der	Abp72636 Anopheles		4	Aab07183 Manduca s	_	Abp72634 Prawn chi			Abb64366 Drosophil	Aae28197 Flea chit	Aae28203 Flea chit	Aae28199 Flea PCfC	Abp72635 Aedes aeg	33 Chelon	Abp72626 Hyphantri
SUMMARIES	A	AAY52523	AAU96327	AAU96328	AAY52525	AAU96329	AAY52533	AAU96337	AAU96338	AAY52535	AAU96339	ABP72636	ABB58595	AAW01824	AAB07183	ABP72619	ABP72634	ABP72625	ABB71737	ABB64366	AAE28197	AAE28203	AAE28199	ABP72635	ABP72633	ABP72626
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dю	Query	100.0	100.0	100.0	97.0	97.0	81.8	81.8	81.8	79.7	79.7	32.5	27.5	27.0	27.0	27.0	27.0	27.0	27.0	26.8	26.2	26.2	26.1	26.1	25.8	25.3
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Aaw08584 Human 50	Aaw40259 Human chi	Aay42425 MO-218 cl	Aae00432 Human chi	Aae25903 Human chi	Abb76291 Human chi	Abu09914 Partial m	Abr55543 Amino aci	Adc24231 Human NOV	Adc51464 Chitotria	Aaw08585 Human 39	Adc24237 Human NOV	Aaw40260 Human chi	Aay42426 MO-13B cl	Aae00433 Human chi	Aae25904 Human chi	Abb76292 Human chi	Aaw31498 Human chi	Abr55544 Amino aci	Abp72621 Human chi
AAW08584	AAW40259	AAY42425	AAE00432	AAE25903	ABB76291	ABU09914	ABR55543	ADC24231	ADC51464	AAW08585	ADC24237	AAW40260	AAY42426	AAE00433	AAE25904	ABB76292	AAW31498	ABR55544	ABP72621
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26	27	28	29	0		71	33 73	4				80	თ	0	-	42	43	4 7	45

ALIGNMENTS

AAY52523;	
22-FEB-2000	(first entry)
House dust mite	te (D. farinae) mite allergen protein (map) PDerf98-555.
Mite allergen house dust mi	Mite allergen protein; map; high molecular weight; HMW-map; allergy; house dust mite; IgE; immunoglobulin E; allergen; mapA; mapB; human; house dust mite; yasarian; house, restmant; diamongis, human; foline.
canine; veter	Affice manual reaction, detayly, treatment, draymosts, deman, tori canine, veterinary, antibody, vaccine, immunisation.
Dermatophagoides farinae.	des farinae.
Key	Location/Qualifiers
Peptide	119 /notes "Signal neutide"
Protein	
W09954349-A2.	
28-OCT-1999.	
16-APR-1999;	99WO-US008524.
17-APR-1998; 13-MAY-1998;	98US-00062013. 98US-0085295P.
02-SEP-1998;	98US-0098909P.
(HESK-) HESKA CORP	CORP.
Mccall CA, H	Hunter SW, Weber ER;
WPI; 2000-052700/04 N-PSDB; AAZ38575, A	WPI; 2000-052700/04. N-PSDB; AAZ38575, AAZ38576, AAZ38577, AAZ38578.
Novel high moused to modif	Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
Claim 3; Page	111-113; 154pp; English.
This sequence	represents Dermatopha 555. Pherf98-555 has
comprising 555	a component of the

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farinae high molecular weight mite allergen protein (HWM-map) composition. The HMW-map composition was isolated from a D. farinae homogenate by gel filtration, with each fraction being analysed for the presence of proteins that bound to IgE present in mite-allergic dog antisera. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic compositions to modify an animal's hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, equines, tragments may also be used to diagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vaccines to passively immunise animals against dust mite hypersensitivity, as
                                                                                                                                                                                                                                                                                                                                                                                        allergens from a mixture of proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 555 AA;
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                                                                                              1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                                                                                           EGSEKYSDMAANPTYROOF10SVLDFLQEYKFDGLDLDWEYPGSRLGNPK1DKQNYLALV
                                                                                                                                                                                                                         121 EGSEKYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                                                                                                                                                                       181 RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
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                                                              1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                             CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
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                                   Gaps
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0
   Length 555;
                                Indels
100.0%; Score 3107; DB 3; 100.0%; Pred. No. 1.8e-217;
                                Mismatches
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                                  Conservative
                 Similarity
                                555;
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   Query Match
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PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
                                                                     MITIVALLSIMACIGLMNASIKRDHNDYSKNPWRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                                                    CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
                                                                                                                                                                                                        EGSEKYSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                                                                                                                              EGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                                                                                                                                                                                                           181 RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                                                                                                                                                     PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIBDRSKLKLGDPA
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                                     1 MKTIYAILSIMACIGLMWASIKRDHNDYSKNPWRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                       CTHLMYGPAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELTTMISLGGWY
                                                                                                                                                                                                                                                                                        RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
Gaps
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Der HMW-map polypeptide #14

15-JUL-2002

AAU96327

RESULT 2
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The invention relates to an isolated mite allergenic protein of bermatophagoides, designated Der HMW-map protein, and its related nucleic caid. The Der HMW-map protein is useful for allociting an immune response caid. The Der HMW-map protein. The protein or a reagant comprising a non-proteinstell ber or having an allergic response to a mite. A cal susceptible to or having an allergic response to a mite. A charing an allergic response to a mite. A charing an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the composition of anti-per HMW-map antibodies in animal fluids, and inhibition of immunoglobulin (Ig) B or Der HMW-map protein activity associated with a disease. Antibodies that bind to Der HMW-map are useful for inhibiting binding of proteins to IgB, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences ANU96314-AAU96342 represent Der HMW-map polypeptides of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                    Dermatophagoides, designated for treating mite allergy.
Der HVW-map, American house dust mite, antiallergic, mite, IgB;
mite allergenic protein; immunoglobulin E; hypersensitivity;
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100.0%; Pred. No. 1.8e-217;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         Der HMW-map protein, useful as a vaccine
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Matches 555; Conservative
                                                                                  Dermatophagoides farinae
                                          immunocomplex formation.
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N-PSDB; ABK69571.
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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for aliciting an immure response against Der HWW-map protein. The protein or a reagent comprising a nonprotein association to real susceptible to or having an allergic response to a mite. A therapeutic composition is useful for identifying an animal (e.g., dog, therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the conformation of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map protein activity associated with a binding of proteins to IgE, to prevent immunocomplex formation, thus benduing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU963142 represent Der HWW-map polypeptides of the invention
                                                                                                                  540
                                                                                                                                     TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWHIMPCP 540
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               KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
                                                                               TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCP
Der HWW-map; American house dust mite; antiallergic; mite; IgE; mite allergenic protein; immunoglobulin E; hypersensitivity; immunocomplex formation.
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                  EGSEKYSDMAANPTYROOFIOSVLDFLOBYKFDGLDLDWEYPGSRLGNPKIDKONYLALV
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                                                                             CTHILMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
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                                                   CTHLMYGFAKIDBYKYTIQVFDPYQDDNHNSWEXRGYERFNNIRLKNPELTTMISLGGWY
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 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                         EGSEKYSDMAANPTYRQOFIOSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
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98US-0085295P.
98US-0098909P.
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02-SEP-1998;
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Gaps

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Query Match
Best Local Similarity 100.
Matches 555; Conservative

(first entry)

15-JUL-2002

AAU96329

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This sequence represents Dermatophagoides farinae mite allergen protein (map) PDerf88-536, the mature form of PDerf88-555 (AAY52523). PDerf88-536 has been a molecular weight of 98 kD, comprising 536 amino acids, and is a component of the Dermatophagoides farinae high molecular weight mite allergen protein (HWM-map) composition. The HWM-map composition was isolated from a D. farinae homogenate by gel filtration, with each fraction being analysed for the presence of proteins that bound to IgE present in mite-allergic dog antisera. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic compositions to modify an animal's hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or composition animals. The proteins of fragments may also be used to diagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, recover desired dust mite allergens from a mixture of proteins
                                                                           Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
                                                                                                                                                        Claim 3; Page 125-127; 154pp; English
WPI; 2000-052700/04.
N-PSDB; AAZ38579, AAZ38580.
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Sequence 536 AA;

139 199 259 240 319 379 360 439 499 480 120 180 300 420 9 79 20 SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ 80 VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF IQSVLDFLQEYKFDGLDLDWBYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS 121 IQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS PGKDKIDRAYDIKELNKI FDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN 181 PGKDKIDRAYDIKELNKLFDWMVWTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN YTMHYYLINNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 241 YTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI ELCQLFQKEEWH1QYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE **ELCOLFOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE** NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTPTTPSPT 421 TPTTTPSPTTPTTPSPTTPTTPSPTTPTPTPTPAPTTSTPSPTTTEHTSETPKYTTY VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMI SLGGWYEGSEKYSDWAANPTYRQQF VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLICIGE 555 VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCOEKLTCIGE . 0 Length 536; 97.0%; Score 3014; DB 3; 100.0%; Pred. No. 1e-210; ive 0; Mismatches 0; 536; Conservative Similarity 140 200 260 380 Query Match Best Local 8 320 440 ò 셤 ò 셤 ò 셤 8 셤 ò 셤 8 P 8 셤 ò 유 δ

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Dermatophagoides, designated Der MRW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response acid. The Der HWW-map protein is useful for eliciting an immune response to against Der HWW-map protein or a reagent comprising a non-proteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map animal fluids, and inhibition of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96342 represent Der HWW-map polypeptides of the invention
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allergenic protein; immunoglobulin E; hypersensitivity;
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100.0%; Pred. No. 1e-210;
ive 0; Mismatches 0;
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100.0%; Fre
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                                                                                               Der HMW-map polypeptide #16
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AAU96329 standard; protein; 536 AAU96329 ID AAU9 RESULT 5

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                                                                                                                                                                                                                                                                                                                                                                                                                    Mite allergen protein; map; high molecular weight; HMW-map; allergy; house dust mite; IgE; immunoglobulin E; allergen; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; feline;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . high molecular weight Dermatophagoides nucleic acid polypeptides to modify an animals' hypersensitivy to mite allergens.
                                         ELCQLPQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGWWWRLE
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                                                                                NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTP;
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/note= "Signal peptide"
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02-SEP-1998;
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modify an animal's hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or domestic animals. The proteins or fragments may also be used to diagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vaccines to passively immunise animals against dust mite hypersensitivity, as positive controls in test kits and as tools to recover desired dust mite allergens from a mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
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81.7%; Pred. No. 2e-176;
ive 24; Mismatches 26;
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                                                                                                                                                                            AAU96338 standard; protein; 509 AA.
                                                                               555
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                                                                                                        492 DCPKGTRWHATLKNCIQE
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                                                                                                                                                                                                                                                                                                     mite allergenic protein; immunocomplex formation.
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421 TPTTPSTTSTTPT--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81.8%; Score 2542; DB 5; Length 509;
81.7%; Pred. No. 2e-176;
ive 24; Mismatches 26; Indels 52
                                                                                                                                                                                                                                                              12; Page 134-136; 161pp; English.
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                                                                  14-SEP-2001; 2001WO-US028730
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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a nonprotein. The protein or a reagent comprising a noncrease spitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the cherapeutic dati-der HWM-map antibodies in animal fullids, and inhibition of immunoglobulin (Ig)E or Der HWM-map protein activity associated with a disease. Antibodies that bind to Der HWM-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus creducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96342 represent Der HWM-map polypeptides of the invention
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Der HMW-map, American house dust mite; antiallergic; mite; I;
mite allergenic protein; immunoglobulin E; hypersensitivity;
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81.7%; Pred. No. 2e-176;
ive 24; Mismatches 26; Indels
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Weber ER

SW,

Hunter

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                                                                              241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPPYGRAMSIEDRSKVKJGDPA 300
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                                                                                                                                                     KGMSPPGFITGEEGVLSYIELCQLFQXEEMHIQYDEYYNAPYGYDDKIWYGYDDLASISC 360
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                                                                                                                                                                                                                                                                ---PITIDSISETPKYTTYIDGHLIKCYKQGYLPHPIDVHKYLVCEYIATPNGGWWVHIM 491
                                                                                                                                                                                                                                                                                                                                                                                                                                      Mite allergen protein, map, high molecular weight; HMW-map, allergy; house dust mite; JgE, immunoglobulin E, allergen; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; feline; canine; veterinary; antibody; vaccine; immunisation.
                                                                                                                                                                                          KLAFLKELGVSGVMIWSLENDDFKGHCGPKYPLLNKVHMINGDEKNSYBCLLGPSTTTP
        CTHLMYGFAKIDEYKYTIQVFDFRQDDNHNSWEKHGYERFNNLRLKNPELTMISLGGWY
                                                  EGSEKYSDMAANPTYRQQFVQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLTLV
                                                                                                         PLYKR PDETDELHTY FNVNY TMHYYLNNGATRDKL VMGVPFYGRAWS I EDRSKLKLGDPA
                                                                                                                                            KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
                                                                                                                                                                                KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
                                                                                                                                                                                                                   TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIM
                                                                     RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
                                                                                                                                                                                                                                      TPITPSTITSTITTE
CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
                                   EGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                                                                                                                                                                                                                                                                                                     D. pteronyssius 98 kD mite allergen protein (map) PDerp98-490.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               115. .117
/note= "Asn is N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240. .242
/note= "Asn is N-glycosylated"
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                                                                                                                                                                                                                                                                                                                                                         AAY52535 standard; protein; 490
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98US-0085295P.
98US-0098909P.
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                                                                                                                                                                                                                                                                                          538 PCPPGTIWCQEKLTCIGE
                                                                                                                                                                                                                                                                                                           DCPKGTRWHATLKNCIQE
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(first entry)
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13-MAY-1998;
02-SEP-1998;
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22-FEB-2000
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This sequence represents Dermatophagoides pteronyssius mite allergen protein (map) PDerp99-490, the mature form of pDerp98-509. PDerp98-490 has protein (map) PDerp99-490, the mature form of pDerp98-509. PDerp98-490 and has a high degree of homology with the D. farinae mature 98 kD allergen, mapB (AAY52525). Nucleic acid molecules encoding PDerp98-490 were isolated from a D. pteronyssius cDNA library by Mybridisation with a probe encoding the D. farinae high molecular weight map (HMW-map) composition. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic compositions to modify an animal show treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or domestic animals. The proteins or fargenesis and birds, especially felines, which have a variety of peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vacines to passively immunise animals against dust mite hypersensitivity, as positive controls in test kits and as cools to recover desired dust mite allergens from a mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        415
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 KRDHNNYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDBYKYTIQVF
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82.5%; Pred. No. 1.5e-171;
ive 21; Mismatches 21;
                                                                                                                                                                                               Claim 3; Page 147-149; 154pp; English.
WPI; 2000-052700/04.
N-PSDB; AAZ38589, AAZ38590.
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243 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPAKGMSPPGFITGEEGVLSYIEL 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Insecticide; pesticide; insect control; insect; toxin; chitinase; enzyme; neuropeptide; transgenic plant; crop protection; mosquito.
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translocating moiety comprising a plant protein capable of acting as a
carrier to translocate toxic moiety inside plant pathogen, and a toxic
                                                                                                                                                                                                                                                                                     GHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIMDCPKGTRWHATLKNCIQE 490
                                                                                     303 CQLFQKBEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMIWSLEND
                                                                                                                                                                 DFKGHCGPKYPLLNKVHNMINGDEKNSYECLLGPSTTTPTTPTTPSTTSTTTPT-----
                                                                                                                                                                                                 ---PTTTDSTSETPKYTTYID
                                                                                                                                  DFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTFTTPTTPTTPSPTTP
                                                                  COLFOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND
 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL
                                                                                                                                                                                                                                                                  GHLIKCYKEGDIPHPINIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note= "possible trypsin activation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "possible trypsin activation site"
150. .157
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/label= Signal_peptide
20. .525
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                    ABP72636 standard; protein; 525 AA
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N-PSDB; ABZ81875.
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Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated bor HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagant comprising a nonproteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for identifying a normal to an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA map protein can be used in the disease. Antibodies that bind to Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences ANU96314. AAU96312
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYT 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mite allergenic protein isolated from Dermatophagoides, designated HMW-map protein, useful as a vaccine for treating mite allergy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SVLDFLQEYKFDGLDLDWBYPGSRLGNPKIDKQNYLTLVRELKBAFEPFGYLLTAAVSPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KDKI DVAYELKELNOLFDWMVWTYDYHGGWENVFGHNAPLYKRPDETDELHTYFNVNYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KRDHNNYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                                                                                                                                                  HMW-map, American house dust mite, antiallergic; mite, IgE; e allergenic protein; immunoglobulin E; hypersensitivity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79.7%; Score 2475; DB 5; Length 490; 82.5%; Pred. No. 1.5e-171; ive 21; Mismatches 21; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 12; Page 144-146; 161pp; English.
                  AAU96339 standard; protein; 490 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                    ER;
                                                                                                                                                                                                                                                                                                                                                                                                                    Weber
                                                                                                                                                                                                                                                                                                                   14-SEP-2001; 2001WO-US028730.
                                                                                                                                                                                                                                                                                                                                                  14-SEP-2000; 2000US-00662293
                                                                                                                   Der HMW-map polypeptide #26
                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                  Dermatophagoides farinae
                                                                                                                                                                                    immunocomplex formation.
                                                                                                                                                                                                                                                                                                                                                                                                                    Hunter SW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2002-351888/38.
                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-351888/
N-PSDB; ABK69585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 490 AA;
                                                                                                                                                                                                                                                   WO200222807-A2
                                                                                 15-JUL-2002
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                                                   AAU96339
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This protein is used in claimed fusion proteins of the invention. Such fusion proteins comprise a translocating moiety and a toxic moiety, where the translocating moiety is a plant protein (e.g. a lectin) capable of acting as a carrier to translocate the toxic moiety across the gut wall of a plant pathogen, and the toxic moiety is an insect-derived peptide or protein capable of causing deleterious effects on growth, development, proteins include allatostatins, chitinase, diuretic hormone and their metabolites and analogues. Polynucleotides encoding the fusion protein, vectors, host cells and transgenic plants that are resistant to disease are also provided. The fusion protein is target-specific, and resists
                                                                                                                                                                                                                                                                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           245
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                                                                                                                                                                                                                                                                                                                                                                          YGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEK 125
                                                                                                                                                                                                                                                                                                                                                                                                                                          YSDMAANPTYRQQFIQSVLDFLQEYKRDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKD 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
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                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                               AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VGRYTREPGVMGYNEFCEKLATEAWDLRWSEEQQVPYAVRNNQWVGYDDLRSVQLKVKYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KELGVSGVMVWSLENDDFKGHC-GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425 TPITETTTPSPTTPSTTPSPTTPSPTTPSPTTTPSPTTPTPTPTPTPTPTPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  485 ITTEHTSEIPKYITYVDGHLIKCY--KEGDIPHPINIHKYLVC------EFVNGGWWVH
                                                                                                                                                                                                                                                                                                            8 LSIMACIGLMNASIKRD-HNDYSKNPPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                414 APTI-----STVAPGITITIPIGANPGITQPPI--SDAPNHITISTITEGNPGITRPPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59,
                                                                                                                                                                                                                                               Length 525;
                                                                                                                                                                                                                                                                              Indele
                                                                                                                                                                                                                                                DB 6;
                                                                                                                                                                                                                                           32.5%; Score 1008.5; DB 6; 38.4%; Pred. No. 7.7e-65; iive 93; Mismatches 187;
                                                                                                                                                                                  degradation in the insect gut
                                                                                                                                                                                                                                                            Local Similarity 38.4 les 211; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 536 IMPCPPGTIW 545
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                                                                                                                                                                                                                 Sequence 525 AA;
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capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), expressed DNA ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form part of the from WIPO at ftp.wipo.int/pub/published_pct_sequences

The invention relates to an isolated nucleic acid detection reagent

Disclosure; SEQ ID NO 2577; 21pp + Sequence Listing;

New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signaling and cell-cell

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PWD,

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Adams M, 2001-656860/75.

Venter JC,

N-PSDB; ABL02698

interactions.

(PEKE) PE CORP NY

23-MAR-2001; 2001WO-US009231 23-MAR-2000; 2000US-0191637P, 11-JUL-2000; 2000US-00614150

Drosophila melanogaster.

WO200171042-A2

27-SEP-2001

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21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQ 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----KEAMVEALGIGINEVAKPSGPOKPSRSRSRDNASNRNRLNGKTEAPLSSRRPSATR 478
                                                                                                                                                                                                                                                                                                                                                                                                                         OTLFILCALAYCI ------ONBASSEG-RVVCYYTNWSVYRPGTAKFNP---ONIN 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SYTLINEESTELGAPAEGPGEQGDATREKGYLAYYEICQTLKDDPEWTVVQPNANVMGPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189 NYAQFVQELRAEFEREAEKTGRTRLLLTMAVPAGIEYIDKGYDVPKLNKYLDWFNVLTYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YHGGWENFYGHNAPLYKRPDETDELHTY - - - FNVNYTMHYYLNNGATRDKLVMGVPFYGR
                                                                                                                                                                                                                                                                                                                                                                                                                                            PFKCTHLMY----GFAKIDBYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE-EWH-IQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                   88; Mismatches 188; Indels 119;
                                                                                                                                                                                                                                                                                                                                                                Score 854.5; DB 4; Length 4498;
Pred. No. 2e-52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NGDEKNSFECILGPSTTTPTTTTTTTTTTT---
                                                                                                                                                                                                                                                                                                                                                                27.5%;
                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 33.8
ses 202; Conservative
                                                                                                                                                                                                                                                                                                                                            Sequence 4498 AA;
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Drosophila, developmental biology, cell signalling, insecticide,

pharmaceutical.

Drosophila melanogaster polypeptide SEQ ID NO 2577

26-MAR-2002

ABB58595 standard; protein; 4498 AA

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                                                  522
-PSPTTPTPTPTPAPTTSTPSPTTTEH 489
                                                                                                                                  TSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNG----GWWVHIMPCPPG 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plant; biological control; baculovirus; hookworm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transgenic plant contg. recombinant insect chitinase coding sequence useful for controlling plant pests.
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                                               479 RPAVSSTQAPP--PSTTFKLTEAEGSSLYIGGRASTTPPPPTTPDP-
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                                                                                                                                                                                                                                                                                                                                                                                                                                         and gut chitinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note= "proposed active site"
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/label= Conserved_region-I
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 19
|abel= Sig_peptide
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                                                                                                                                                                                                                                                                                  Ä
                                                                                                                                                                                                                                                                                  AAW01824 standard; protein; 554
                                                                                                                                                                                                                                                                                                                                                                                                                                         Manduca sexta larva epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            insect; transgenic insecticide; tobacco
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446 SPITPTITPSPITTI-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAT62557
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                                                                                                                                                                                                                                                                                                                                                                                       27-MAY-1997
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                                                                                                     490
                                                                                                                                                                                                                                                                                                                                    AAW01824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       biocide;
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                                                                                                                    231 LYKRPHD-QWAYEKLANVNDGLHLWEEKGCPSNKLVVGIPFYGRSFTLSAGNNNYGLGTFI
                                                                                                                                                                                                                                                                                                       RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI
                                                                                                                                                                                                                                                                                                                                                                         WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            397 -----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTTAKPASTTKTTVKTT
3 ATLATLAVLALATAV -----QSDSRARIV CYFSNWAVYRPGVGRYGIEDIPVEKCTHI
                                 MYGFAKI DEYKYTI QVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMI SLGGWYEGSE
                                                                                                   KYSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL
                                                                                                                                                                   KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNWTYDYHGGWENFYGHNAP
                                                                                                                                                                                                                                     LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED------
                                                                                                                                                                                                                                                                                                                                                                                            343 WYGYEDPRSVEIKMYWIKQKGYLGAMTWAIDMDFFQGLCGEKNPLIKILHKHMS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                         FECILGDSTYTPTPTTTPTT-----TTPTTPS-----PTTPTTTPSPTTPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             457 TIPITIPSPIT-----PIP-TIPIPAPITSIPSPITITEHISETPKYTTYVDGHLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              450 TTTTAKPPOSVIDEENDINVRPEPKPEPQPEPEVEVP-PTENE-------VDGSEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Imaginal disc growth factor, IDGF; chitinase related protein; CHRP; tissue growth; wound healing; bone repair; cartilage repair; angiogenesis meat production; milk production; cancer; gene therapy; gut chitinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 498 -CNSDQDYIPDKKHCDKXWRC--VNGE--AMQFSCQHGTVFNVELNVC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               506 KCYKEGD-IPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIMCQEKLTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB07183 standard; protein; 554
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Manduca sexta gut chitinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPI; 2000-349702/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Manduca sexta
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20;

Gaps

64

6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL

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sexta chitinase.

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The present sequence is the protein sequence for the Manduca sexta gut chithnase. It was used to isolate the Drosophila melanogaster imaginal disc growth factor 4 (IDGF4) coding sequence. IDGF4 is a member of the chitinase related proteins (CHRP4) and is involved in the promotion of cell growth, motility and morphogenesis. The gene and protein are expected to have mammalian homologues. They can be used in the treatment of cancer, wound healing, tissue regeneration following arthritis, osteoporosis, other skeletal disorders and burns, for revitalising scar tissue resulting from surgical procedures, irradiation, laceration, toxic chemicals, viral or bacterial infection or burns, to promote tissue growth during tissue engineering, for example tissues for skin graft replacements and bone regrowth, and to modulate the function of the female reproductive tract. In addition, they can also be used to increase meat, egg, sperm and milk production in animals. One possible method of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65 MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSE 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FECILGPSTITPIPITIFITPT-----TTPTTPS-----PITPTTTPSPTTTTPSP 456
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                                                                                                                                                                                                                                                                                                                                                                                                                                              6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED------
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                             91,
                                                                                                                                                                                                                                                                                                                                                                          27.0%; Score 838.5; DB 3; Length 554; 35.4%; Pred. No. 1.9e-52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -CNSDQDYIPDKKHCDKYWRC--VNGE--AMQFSCQHGTVFNVELNVC
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                                                                                                                                                                                                                                                                                                                                                                                                             210;
                                                                                                                                                                                                                                                                                                                                                                                         35.4%; Pred. No. 1.9e ive 79; Mismatches
                Disclosure; Col 53-58; 40pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                      egg, sperm and m
by gene therapy
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tes 208; Conserv
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AA

ABP72619 standard; protein; 554

498

(first entry)

11-JUN-2003

ABP72619;

ABP7261 ID AB XX AC AB XX DT 11

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The present sequence is that of Manduca sexta chitinase. This protein can comprise a translocating molety and a toxic molety, where the translocating molety and a toxic molety, where the translocating molety is a plant protein (e.g. a lectin) capable of acting as a carrier to translocate the toxic molety is an insect-derived peptide or plant pathogen, and the toxic molety is an insect-derived peptide or protein capable of causing deleterious effects on growth, development, reproduction or mortality in pest insects. Suitable insect peptides and proteins include allatostatins, chitinase, diuretic hormone and their metabolites and analogues. Polymucleotides encoding the fusion protein, vectors, host cells and transgenic plants that are resistant to disease are also provided. The fusion protein is target-specific, and resists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
                                             pesticide; insect control; insect; toxin; chitinase; enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fusion protein useful for combating insect pests, comprises a translocating moiety comprising a plant protein capable of acting as a carrier to translocate toxic moiety inside plant pathogen, and a toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KYSDWAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 ATLATLAVLALATAV-----QSDSRARIVCYPSNWAVYRPGVGRYGIEDIPVEKCTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           56 IYSFIGVTEGNSEVLIIDPELD-----VDKNGFRNFTSLRSSHPSVKFMVAVGGWAEGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 ALLSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
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                                                              neuropeptide; transgenic plant; crop protection
                                                                                                                                                                                                                    note= "Asn is N-glycosylated"
                                                                                                                                                                                                                                                                     /note= "Asn is N-glycosylated"
545. .548
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label= Mature_protein
                                                                                                                                         l. .19
/label= Signal_peptide
                                                                                                                       Location/Qualifiers
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303. .306
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Matches 208; Conservative
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Best Local Similarity
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Modified-site
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                                             Insecticide;
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450 TTTTAKPPQSVIDEENDINVRPEPKPEPQPEPEVEVP-PTENE------VDGSEI 497
                                                                            291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFOKEE--WHIOYDEYYNAPYGYNDKI 348
                                                                                                                                                                                                                                                                       349 WYGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
                                                                                                                                                                                                                                                                                                                                                                     ||||:| |: |: ::|: | | | |::: ||:| || |:: ||:| 343 WVGYEDPRSVEIKANIKQKGYLGAMIWAIDMDDFQGLCGEKNPLIKILHKHMS----- 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                397 -----SYIVPPPHIENTIPIPEWARPPSIPSDPSEGDPIPITTAKPASTIKTIVKIT 449
111 KYSHMVAQKSTRMSFIRSVVSFLKKYDFDGLDLDWEYPGAADRGGSFSDKDKFLYLVQEL 170
                                            184 KDAF--EPHGYLLTAAVSPGKDKIDRAYDIXELNKLFDWMNVMTYDYHGGWENFYGHNAP 241
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Search completed: March 22, 2004, 06:51:45 Job time : 170.752 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                              OM protein - protein search, using sw model
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March 22, 2004, 06:59:34; Search time 113.53 Seconds (without alignments) 1265.926 Million cell updates/sec Run on:

US-09-662-293-15 3107 1 MKIIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE 555 Title: Perfect score:

Sequence:

1049977 seqs, 258955339 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

Scoring table:

1049977 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

. /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
. /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
. /cgn2_6/ptodata/2/pubpaa/US108_PUBCOMB.pep:*
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. /cgn2_6/ptodata/2/pubpaa/US10_PUBM_PUB.pep:*
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1: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*

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7/cgn2_6/ptodata/2/pubpaa/PSO8_NEW PUB.pep:*

8: /cgn2_6/ptodata/2/pubpaa/USO8_NEW PUB.pep:*

9: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

	Description	Sequence 15, Appl	Sequence 18, Appl	Sequence 21, Appl	Sequence 35, Appl	Sequence 38, Appl	Sequence 41, Appl	10	'n	Sequence 4, Appli	4,	9	14	15,	Sequence 14, Appl	1, A
	QI	US-10-218-743-15	US-10-218-743-18	US-10-218-743-21	US-10-218-743-35	US-10-218-743-38	US-10-218-743-41	US-10-004-219B-10	US-10-161-547-2	US-10-004-219B-4	US-10-161-547-4	US-10-004-219B-9	US-10-161-547-14	US-10-161-547-15	US-10-004-219B-14	US-10-004-219B-1
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ALIGNMENTS

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GREBEAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: Maber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT APPLICATION NUMBER: US/09/292,225
FRIOR APPLICATION NUMBER: US/09/292,225
FRIOR APPLICATION NUMBER: 60/098,909
PRIOR APPLICATION NUMBER: 60/098,909
PRIOR FILING DATE: 1998-06-13
PRIOR FILING DATE: 1998-05-13
PRIOR FILING DATE: 1998-04-17
PRIOR FILING DATE: 1998-04-17
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Delt, Length 555;

Best Local Similarity 100.0%; Pred. No. 3e-220;

Matches 555; Conservative 0; Mismatches 0; Indels 0;
Sequence 15, Application US/10218743
Publication No. US20030096779A1
GENERAL INFORMATION:
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; Sequence 18, Application US/10218743
; Publication No. US20030096779A1
; Bublication No. US20030096779A1
; Bublication No. US20030096779A1
; APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Enc R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
; TILLE OF INVENTION: AND USES THEREOF
; TILLE OF INVENTION: AND USES THEREOF
; TILLE OF INVENTION NUMBER: US/10/218,743
CURRENT RILING DATE: 1999-04-13
; PRIOR PILING DATE: 1999-04-15
; PRIOR APPLICATION NUMBER: 60/098,295
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; PRIOR PILING DATE: 1998-04-17
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; PRIOR PILING DATE: 1998-04-17
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; NUMBER OF SEQ ID NOS: 49
; SOFTWARE: PATENTIN VET: 2.0
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                                                                                                          RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA 240
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                                          EGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
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100.0%; Score 3107; DB 14; Length 555;
Best Local Similarity 100.0%; Pred. No. 3e-220;
Matches 555; Conservative 0; Mismatches 0; Indels 0;
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MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                           1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                                                                       61 CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTHISLGGWY
                                                                                                                                                                                                                                                                        EGSEKYSDMAANPTYRQOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
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APPLICANT: Mutter, Shirley Wu
APPLICANT: Wheter, Exic R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PRO'
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PRO'
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT APPLICATION NUMBER: US/10/218,743
CURRENT APPLICATION NUMBER: US/09/292,225
PRIOR APPLICATION NUMBER: 60/098,909
PRIOR FILING DATE: 1999-0-02
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR PILING DATE: 1998-04-17
PRIOR PILING DATE: 1998-04-17
PRIOR PILING DATE: 1998-04-17
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US-10-218-743-21
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Publication No. US20030096779A1
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Length 536;

DB 14;

97.0%; Score 3014;

120

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240

360

420

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APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REPERRORE: AL.2-C3
CURRENT APPLICATION NUMBER: US/10/218,743
CURRENT FILING DATE: 1999-04-15
FRIOR APPLICATION NUMBER: US/09/292,225
PRIOR PILING DATE: 1999-04-15
FRIOR PELING DATE: 1999-04-15
FRIOR PELING DATE: 1999-05-13
FRIOR PELING DATE: 1998-05-13
FRIOR PLING DATE: 1998-04-17
FRIOR PELING DATE: 1998-04-17
FRIOR PELING DATE: 1998-04-17
FRIOR PELING DATE: 1998-04-17
FRIOR APPLICATION NUMBER: 60/099,565
FRIOR PELING DATE: 1998-04-17
FRIOR APPLICATION NUMBER: 09/062,013
FRIOR PELING DATE: 1998-04-17
FRIOR PELING DATE: 1998-04-17
FRIOR APPLICATION NUMBER: 09/062,013
FRIOR PELING DATE: 1998-04-17
FRIOR PELING DATE: 1998-04-17
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FRIOR PELING DATE: 1998-04-17
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                                                                                                               1 MKTTFALFCIWACIGLMNAATKRDHNNYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
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                                                                1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                                                                                   61 CTHIMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
      Gaps
      52;
   Indels
      26;
      Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Dermatophagoides farinae
US-10-218-743-38
      24;
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         456; Conservative
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Sequence 35, Application US/10218743

Publication No. US2003009677941

SEQUENCE 35, Application No. US2003009677941

SEQUENCE TIMEORMATION:

APPLICANT: HUNCENTION:

APPLICANT: HUNCENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

FILE REPERENCE: AL-2-C3

CURRENT APPLICATION NUMBER: US/10/218,743

CURRENT FILING DATE: 1999-04-13

FRIOR APPLICATION NUMBER: 60/098,909

FRIOR FILING DATE: 1998-05-13

FRIOR APPLICATION NUMBER: 60/098,565

FRIOR FILING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 60/098,565

FRIOR FILING DATE: 1998-04-17

PRIOR SEQ ID NOS: 49

SEQ ID NO 35

LENGTH: 509

TUBERT OF SEQ ID NOS: 49

TUBERT OF SEQ ID NOS: 49

TUBERT OF SEQ ID NOS: 49

TUBERT OF SEQ ID NOS: 49

TUBERT OF SEQ ID NOS: 49

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TUBERT OF SEQ ID NOS: 49
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                                        Gaps
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Pred. No. le-178;
                                        0; Indels
      100.0%; Pred. No. 2e-213; ative 0; Mismatches 0
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81.7%;
Best Local Similarity 100.
Matches 536; Conservative
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TYPE: PRT

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Sequence 41, Application US/10218743

Sequence 41, Application US/10218743

Publication No. US20030096779A1

GENERAL INFORMATION:

APPLICANT: Mcall, Catherine A.

APPLICANT: Mcall, Catherine A.

APPLICANT: Wovel DerwardPhacoides Nucleic Acid Molecules, Proteins

TITLE OF INVENTION: NOVEL DERWARDPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE REFERENCE: AL-2-C3

CURRENT FILING DATE: 2002-08-13

PRIOR APPLICATION NUMBER: US/09/292,225

PRIOR APPLICATION NUMBER: 60/098,909

PRIOR FILING DATE: 1998-09-02

PRIOR PRILING DATE: 1998-09-02

PRIOR FILING DATE: 1998-04-15

PRIOR FILING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 60/098,565

PRIOR FILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 41

LENGTH: 490
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                                                                                                                  CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
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                                                                                     1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                            Gaps
                                          52;
  Length
                                          Indels
Query Match 81.8%; Score 2542; DB 14; Best Local Similarity 81.7%; Pred. No. 1e-178; Matches 456; Conservative 24; Mismatches 26;
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APPLICANT: Macrozyme
APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Boct, Rolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: At use in therapy or prophylaxis against diseases in
TITLE OF INVENTION: Which mucus is involved or infection diseases
TITLE OF INVENTION: Which mucus is involved or infection diseases
CURRENT APPLICATION NUMBER: US/10/004,219B
CURRENT PILING DATE: 201-11-02
SOFTWARE: PATENTING PATE: 201-11-02
SOFTWARE: PATENTIN VEY: 2.1
                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                             63 DPFQDDNHNSWEKHGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFVQ 122
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                                                                                                                                                                                                                       82 DPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQ
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                                                                                                                                                                                                                                                                                                                                                                                          KDKIDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYT
                                                                                                                                           22 KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
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                                                                                                   52;
                                                             Length 490;
                                                                                                   Indels
                                                           Query Match 79.7%; Score 2475; DB 14; Best Local Similarity 82.5%; Pred. No. 8.4e-174; Matches 443; Conservative 21; Mismatches 21;
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Pred. No. 5.3e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: /note="Human chitotriosidase" US-10-004-219B-10
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; ORGANISM: Dermatophagoides farinae
US-10-218-743-41
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ORGANISM: Homo sapiens
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Best Local Similarity
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ORGANISM: Artificial Sequence FEATURE:
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Matches 158; Conservative
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                                                                                                                                                                                              205 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY 264
                                                                                                                                                                                                                                                   265 YLMNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
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                                                                                 93 - EKRGYERFUNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYK
                                             XIVCYFINWAQYRQGBARFLPKDLDPSLCTHLIYAFAGMTNHQLST-----TEW
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 Gaps
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| Sequence 2, Application US/10161547
| Publication No. US20030143216A1
| GENERAL INFORMATION:
| APPLICANT: Gray, Patrick W.
| APPLICANT: Tjoeker, Larry W.
| TITLE OF INVENTION: GHITINASE CHITIN-BINDING FRAGMENTS
| TITLE OF INVENTION: GHITINASE CHITIN-BINDING FRAGMENTS
| CURRENT APPLICATION NUMBER: US/10/161,547
| CURRENT FILING DATE: 1999-03-12
| PRIOR PILING DATE: 1999-03-12
| PRIOR PILING DATE: EARLIER APPLICATION NUMBER: 09/039,198
| PRIOR PILING DATE: EARLIER FILING DATE: 1998-03-12
| NUMBER OF SEQ ID NOS: 39
| SOFTHARE: PatentIn Ver. 2.0
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 58;
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 Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       445 PSPTTPTTTPSPTTPTTPSPTTPT 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                 374 PELEVP-KPGQPSEPEHGPSPGQDT 397
 85;
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Best Local Similarity 34.2
Matches 152; Conservative
 Conservative
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US-10-161-547-2
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US-10-161-547-2
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APPLICANT: Macrozyme
APPLICANT: Aerts, Johannes M.P.G.
APPLICANT: Boot, Rolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: which mucus is involved or infection diseases in
TITLE OF INVENTION: which mucus is involved or infection diseases
FILE REFERENCE: 2183-5136US
FILE REPERENCE: 2183-5136US
CURRENT APPLICATION NUMBER: US/10/004,219B
CURRENT FILING DATE: 2001-11-02
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PATENTING PATE: 201-11-02
SEQ ID NO 4
LENGTH: 473
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                                  250 WLOKGTPASKLILGMPTYGRSFTLASSSDTRVGAPATGSGTPGPFTKEGGMLAYYEVCSW 309
                                                                                                                                                                                                                                                325 FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAPLKELGVSGVMVWSLENDDFK 384
                                                                                                                                                                                                                                                                                134 TYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-- 191
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                                                                                                                                                                                                                                                                                                                                                                                                                              -----RYPLIQTLRQELSLPYLPSGT 394
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                                                                                                                        265 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEGVLSYIELCQL
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                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: Description of Artificial Sequence: mouse AMCase OTHER INFORMATION: amino acid sequence deduced from cDNA sequence
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292 GAYTRQAGFWAYYEICTFLRSGATEVW----DASQEVPYAYKANEWLGYDNIKSFSVKAQ 347
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                                                                                                                                                                                                                                  Sequence 4, Application US/10161547
; Sequence 4, Application US/10161547
; Publication No. US20030143216A1
; GENERAL INFORMATION:
   APPLICANT: Gray, Patrick W.
   APPLICANT: Tjoelker, Larry W.
   TITLE OF INVENTION: CHITINABE CHITIN-BINDING FRAGMENTS
   FILE REFERENCE: 2786/35407
; CURRENT PFLICATION NUMBER: US/10/161,547
CURRENT FILING DATE: 2002-06-03
; PRIOR PAPLICATION NUMBER: US/09/267,574
; PRIOR PLILING DATE: EARLIER PILING DATE: 1999-03-12
; PRIOR PLILING DATE: EARLIER FILING DATE: 1998-03-12
; NUMBER OF SEQ ID NOS: 39
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 4
; LENGTH: 466
; TYPE: PRI
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23.6%; Score 732; DB 14; Length 466;
Best Local Similarity 33.9%; Pred. No. 1.6e-45;
Matches 151; Conservative 85; Mismatches 151; Indels 5
                                                                         348 WLKONNFGGAMIWAIDLDDFTGSFCDQGKFPLTSTLNKA---
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                                                                                                                                                      393 GCTAPDVPSEPVTTP 407
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US-10-161-547-4
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RESULT 11 US-10-004-219B-9

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                                                                                             APPLICANT: MACIOZYME APPLICANT: MACIOZYME APPLICANT: MACIOZYME APPLICANT: MACIOZYME APPLICANT: Abrts, Johannes M.F.G. APPLICANT: Boot, Rolf G. Tarle Of INVENTION: A mammalian mucinase, its recombinant production, and TITLE OF INVENTION: which mucus is involved or infection diseases in TITLE OF INVENTION: which mucus is involved or infection diseases in FILE REPERENCE: 2.183-5.136US CURRENT APPLICATION NUMBER: US/10/004,219B CURRENT APPLICATION NUMBER: US/10/004,219B SOFTWARE: 2010-11-02
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Sequence 14, Application US/10161547

Publication No. US20030143216A1

Publication No. US20030143216A1

APPLICANT: Tjoelker, Larry W.

TITLE OF INVENTION: CHITINAE CHITIN-BINDING FRAGMENTS

FILE REPERENCE: 27866/3340

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT PILING DATE: 1999-03-12

PRIOR FILING DATE: 1999-03-12

PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39
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23.5%; Score 729.5; DB 14; Length
Best Local Similarity 37.0%; Pred. No. 2.3e-45;
Matches 154; Conservative 69; Mismatches 144; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; LOCATION: (1). (452)
; OTHER INFORMATION: /note="Mouse AMCase"
US-10-004-219B-9
Sequence 9, Application US/10004219B
Publication No. US20030087414A1
GENERAL INFORMATION:
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LOCATION: (1).
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289 KGATKQRIQ-DQ--KVPYIFRDNQWVGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDFA 345
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      51 NDETLYQBFNGLKKMNPKLKTLLAIGGWNFGTQKFTDMVATANNRQTFVNSAIRFLRKYS 110
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APPLICANT: Macrozyme
APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Boot, Rolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: A mammalian mucinase, its recombinant diseases in
TITLE OF INVENTION: Which mucus is involved or infection diseases
TITLE REPERENCE: 2183-5136US
CURRENT APPLICATION NUMBER: US/10/004,219B
CURRENT FILING DATE: 2001-11-02
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PatentIn Ver. 2.1
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                                                                                                                                  205 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; LOCATION: (1)..(455)
; OTHER INFORMATION: /note="Human AMCase"
US-10-004-219B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Sequence 14, Application US/10004219B; Publication No. US20030087414A1; GENERAL INFORMATION:
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ORGANISM: Homo sapiens
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LOCATION: (1).
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US-10-004-219B-14
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Publication No. US20030143216A1

GENERAL INFORMATION:

APPLICANT: Gray, Patrick W.

APPLICANT: Tjoelker, Larry W.

TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRACMENTS

FIRE REFERENCE: 27866/35407

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT FILING DATE: 1999-03-12

PRIOR PILING DATE: 1999-03-12

PRIOR PLING DATE: BARLIER APPLICATION NUMBER: 09/039,198

PRIOR FILING DATE: BARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39

SOFTWARE: PATCHTIN VET. 2.0
                                                                                                                                                         DB 14; Length 373;
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                                                                                                                                                  23.2%; Score 721.5; DB 14; Length ilarity 37.7%; Pred. No. 6.9e-45; Conservative 83; Mismatches 117; Indels
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Matches 136; Conservat
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Search completed: March 22, 2004, 06:59:26 Job time : 113.679 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

March 22, 2004, 06:30:23 ; Search time 168.752 Seconds (without alignments) 929.256 Million cell updates/sec Run on:

US-09-662-293-18 3107 1 MKTIYAILSIMACIGIMNAS.....IMPCPPGTIWCOEKLTCIGE 555 Title: Perfect score:

Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

Searched:

1586107 Total number of hits satisfying chosen parameters: 1586107 seqs, 282547505 residues

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A Geneseq 29Jan04:* 1: geneseqp1980s:* Database

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ALIGNMENTS

> Location/Qualifiers Dermatophagoides farinae. Key Peptide Protein

98US-00062013. 98US-0085295P. 98US-0098909P. 99WO-US008524 17-APR-1998; 13-MAY-1998; 02-SEP-1998; 16-APR-1999; 28-OCT-1999

W09954349-A2

Mccall CA, Hunter SW, Weber ER; (HESK-) HESKA CORP.

WPI; 2000-052700/04. N-PSDB; AAZ38575, AAZ38576, AAZ38577, AAZ38578.

Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.

Claim 3; Page 111-113; 154pp; English.

This sequence represents Dermatophagoides farinae mite allergen protein (map) PDerf98-555. PDerf98-555 has a molecular weight of 98 kD, comprising 555 amino acids, and is a component of the Dermatophagoides

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farinae high molecular weight mite allergen protein (HWM-map)

composition. The HWW-map composition was isolated from a D. farinae
homogenate by gel filtration, with each fraction being analysed for the
presence of proteins that bound to IgE present in mite-allergic dog
antisera. Mite allergenic proteins and peptides, and mucleic acids
encoding them, may be used in therapautic compositions to modify an
c encoding them, may be used in therapautic compositions to modify an
c nimal's hypersensitivity reaction to mite allergens. Animals that may be
treated include mammals and birds, especially felines, canines, equines,
thumans, other pets, and work or domestic animals. The proteins may also be used to diagnose allergies via a skin test. The
proteins and peptides can also be used to raise antibodies, which have a
variety of potential uses. For example, they can be used as vaccines to
passively immunise animals against dust mite hypersensitivity, as
positive controls in test kits and as tools to recover desired dust mite
allergens from a mixture of proteins
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Matches 555; Conservative
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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related mucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a non-proteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the chemunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibition binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96312 New mite allergenic protein isolated from Dermatophagoides, designated Der HMW-map protein, useful as a vaccine for treating mite allergy. 121 EGSEKYSDMAANPTYRQOFIQSVLDFLQBYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV 241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 1 MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK 181 RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 301 KGMSPPGFISGEEGVLSYIELCQLFQKBEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 1 MKTIYAILSIMACIGLANASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY 61 CTHIMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY EGSEKYSDMAANPIYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA Der HMW-map; American house dust mite; antiallergic; mite; IgE; mite allergenic protein; immunoglobulin E; hypersensitivity; immunocomplex formation. ; Score 3107; DB 5; ; Pred. No. 1.8e-217; 0; Mismatches 0; Claim 12; Page 114-116; 161pp; English. ER. 100.0%; Weber 14-SEP-2001; 2001WO-US028730. 14-SEP-2000; 2000US-00662293 Query Match
Best Local Similarity 100.
Matches 555; Conservative Dermatophagoides farinae Mccall CA, Hunter SW, WPI; 2002-351888/38. (HESK-) HESKA CORP N-PSDB; ABK69571 Sequence 555 AA; WO200222807-A2 21-MAR-2002 61 241 301 121 181 셤 셤 셤 g 쉱 g ઠે 8 ₽ 8 ઇ ò Ä 555 AAU96327 standard; protein; (first entry)

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Length 555; Indels 120

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Der HMW-map polypeptide #14

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AAU96327;

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                                                                         TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCP
                                             Der HVW-map, American house dust mite; antiallergic; mite; 1gE; mite allergenic protein; immunoglobulin E; hypersensitivity;
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                                                                                                                                                             PGTIWCQEKLTCIGE 555
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N-PSDB; ABK69573.
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                                                                                                                                                                                                                                                                                      KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
                   MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFK
                                                                                                                                                                                       181 RELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDHMNVMTYDYHGGWENFYGHNA
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                                                       CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
                                                                         CTHIMYGFAKIDEYKYTIQVFDFYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
                                                                                                               EGSEKYSDMAANPTYROOFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                      121 EGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
                                                                                                                                                                      RELKDAFEPHGYLLTAAVSPGKDKI DRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNA
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MKTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPPK
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02-SEP-1998;
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AAU96329;

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This sequence represents Dermatophagoides farinae mite allergen protein

(map) PDerf98-536, the mature form of PDerf98-555 (AAY5523). PDerf98-536

(map) PDerf98-536, the mature form of PDerf98-555 (AAY5523). PDerf98-536

(has a molecular weight of 98 kD, comprising 536 amino acids, and is a

component of the Dermatophagoides farinae high molecular weight mite

allergen protein (HWM-map) composition. The HMW-map composition was

isolated from a D. farinae homogenate by gel filtration, with each

craction being analysed for the presence of proteins that bound to IgB

present in mite-allergic dog antisera. Wite allergenic proteins and

peptides, and moleler acids encoding them, may be used in therapeutic

compositions to modify an animal's hyperensitivity reaction to mite

allergens. Animals that may be treated include mammals and birds,

compositions compositions, ordines, chumans, other pets, and work or

allergies via a skin test. The proteins and peptides can also be used to

cause antibodies, which have a variety of potential uses. For example,

they can be used as vaccines to passively immunise animals against dust

mite hypersensitivity, as positive controls in test kits and as tools to

recover desired dust mite allergens from a mixture of proteins
                                                                                  Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
                                                                                                                                                                      Claim 3; Page 125-127; 154pp; English.
                             N-PSDB; AAZ38579, AAZ38580.
2000-052700/04.
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Sequence 536 AA;

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                                                                20 SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ 79
                                                                                               1 SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ 60
                                                                                                                                   VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQP
                                                                                                                                                      VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF
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97.0%; Score 3014; DB 3; 100.0%; Pred. No. 1e-210;
        100.0%; Prea. ...
                                Matches 536; Conservative
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RESULT 5 AAU96329 ID AAU96329 standard, protein, 536 AA.

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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a nonpresing susceptible to or having an allergic response to a mite. A therapeutic composition is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the categoric and anti-Der HWW-map antibodies in animal fluids, and inhibition of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96312 represent Der HWW-map polypeptides of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 VFDPYQDDNHNSWEKRGYERFNNLRLKNPELLTMISLGGWYEGSEKYSDMAANPTYRQQF 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   n Dermatophagoides, designated for treating mite allergy.
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100.0%; Pred. No. 1e-210;
ive 0; Mismatches 0;
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                                                                                                 Der HMW-map polypeptide #16.
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TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIM 537
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modify an animal's hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, humans, other pets, and work or domestic animals. The proteins or fragments may also be used to diagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vaccines to passively immunise animals against dust mite allerge shypersensitivity, as positive controls in test kits and as tools to recover desired dust mite allergens from a mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                EGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALV
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                                                                                                                                                                                                                                                                                                                                                                                                                                            PLYKR PDETDELHTY FNVNY TMHYYLNNGATRDKLVMGVPFYGRAWS I EDRSKLKLGDPA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Der HWW-map; American house dust mite; antiallergic; mite; IgB;
mite allergenic protein; immunoglobulin E; hypersensitivity;
                                                                                                                                                                                         Score 2542; DB 3; Length 509;
Pred. No. 2e-176;
4; Mismatches 26; Indels 55
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ilarity 81.7%;
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        241 YTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 300
                                                                                                                                                                                                                                                                                                                                                                                                                                             Mite allergen protein; map; high molecular weight; HMW-map; allergy; house dust mite; IgB; immunoglobulin E; allergen; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; feline; canine; veterinary; antibody; vaccine; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
                                      ELCOLFOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE
                                                       301 BLCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVKVWSLE
                                                                                               NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTPTTTTPTTFFFT
                                                                                                                 NDFKGHCGPKNPLINKVHNMINGDEKNSFECILGPSTTTPTPTTTTTTTTTTFTPSPT
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                                                                                                                                                                                                                                  VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTCIGE
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N-PSDB; AAZ38585, AAZ38586, AAZ38588.
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    19 /note= "Signal peptide"

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98US-0085295P.
98US-0098909P.
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/note= "M.
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22-FEB-2000
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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for allciting an immune response against Der HWW-map protein. The protein or a reagant comprising a nonproteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A learned of the composition is useful for identifying an animal to an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map protein activity associated with a binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences ANU96342
                                                                                                                                                                                                                                                                                                                 mite allergenic protein isolated from Dermatophagoides, designated HWW-map protein, useful as a vaccine for treating mite allergy.
                                                                                                                                                                                                                                                                                                                                                                            Claim 12; Page 134-136; 161pp; English.
                                                                                           14-SEP-2001; 2001WO-US028730
                                                                                                                                    14-SEP-2000; 2000US-00662293
                                                                                                                                                                                                                 Hunter SW,
                                                                                                                                                                                                                                                      WPI; 2002-351888/38.
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                  WO200222807-A2
                                                        21-MAR-2002
                                                                                                                                                                                                               Mccall CA,
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Weber ER

52; 81.8%; Score 2542; DB 5; Length 509; 81.7%; Pred. No. 2e-176; .ive 24; Mismatches 26; Indels 55 Conservative Similarity Best Local Sim: Matches 456; Query Match

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---PITTDSTSETPKYTTYIDGHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIM 491 TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIM 509 PCPPGTIWCQEKLTCIGE 555 492 DCPKGTRWHATLKNCIQE 421 TPTTPSTTSTTPT--481 RESULT 8 g 챵 g ò

AAU96338 standard; protein; 509 AA. AAU96338;

(first entry) 15-JUL-2002

Der HMW-map polypeptide #25.

protein; immunoglobulin E; hypersensitivity Der HMW-map; American house dust mite; antiallergic; immunocomplex formation. allergenic

Dermatophagoides farinae.

WO200222807-A2.

21-MAR-2002

14-SEP-2001; 2001WO-US028730.

2000US-00662293. 14-SEP-2000;

(HESK-) HESKA CORP

Weber ER; Mccall CA, Hunter SW,

2002-351888/38. N-PSDB; ABK69583 New mite allergenic protein isolated from Dermatophagoides, designated Der HMW-map protein, useful as a vaccine for treating mite allergy.

Claim 12; Page 139-141; 161pp; English

The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWM-map protein is useful for eliciting an immune response against Der HWM-map protein. The protein or a readent comprising a nonpresence susceptible to or having an allergic response to a mite. A therapeutic composition is useful for identifying an animal (e.g., dog, therapeutic composition is useful for desenatising a host animal to an allergic response to a mite. The DNA and protein can be used in the allergic anti-Der HWM-map antibodies in animal fluids, and inhibition of immunoglobulin (Ig)E or Der HWM-map protein activity associated with a disease. Antibodies that bind to Der HWM-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96312

Sequence 509 AA;

Gaps 52; 81.8%; Score 2542; DB 5; Length 509; 81.7%; Pred. No. 2e-176; ive 24; Mismatches 26; Indels 5; Matches 456; Conservative Similarity Query Match Local

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WPI; 2000-052700/04.
N-PSDB; AAZ38589, AAZ38590.
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                                            EGSEKYSDMAANPTYRQQFVQSVLDFLQEYKFDGLDLDMEYPGSRLGNPKIDKQNYLTLV
                                                                              RELKEAFEPFGYLLTAAVSPGKDKIDVAYELKELNQLFD#MNVMTYDYHGGWENVFGHNA
                                                                                                                 PLYKRPDETDELHTYFNVNYTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPA
                                                                                                                                                  KGMSPPGFITGEEGVLSYIELCQLFQXEEWHIQYDEYNAPYGYNDKIWVGYDDLASISC
                                                                                                                                                                                      KLAFLKELGVSGVMIWSLENDDFKGHCGPKYPLLNKVHMMINGDEKNSYECLLGPSTTTP
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                                                                    RELKDAFEPHGYLLTAAVSPGKDKI DRAYDIKELNKLFDMMVWTYDYHGGWENFYGHNA
                                                                                                      PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
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CTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWY
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/note= "Asn is N-glycosylated"
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98US-0085295P.
98US-0098909P.
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13-MAY-1998;
02-SEP-1998;
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This sequence represents Dermatophagoides pteronyssius mite allergen protein (map) Poerp98-490, the mature form of pDerp98-509. Poerp98-490 and has a molecular weight of 98 kD, comprising 490 amino acids, and has a high degree of homology with the D. farinae mature 98 kD allergen, map8 (AAY52525). Nucleic acid molecules encoding PDerp98-490 were isolated from a D. pteronyssius cDNA library by hybridisation with a probe encoding the D. farinae high molecular weight map (HWW-map) composition. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic compositions to modify an animal, s hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or domestic animals. The proteins and peptides can also be used to diagnose allergies via skin test. The proteins and peptides can also be used to diagnose allergies wish skin test. The proteins and potential uses. For example, they can be used as vaccines to passively immunise animals against dute mite hypersensitivity, as positive controls in test kits and as tools to recover desired dust mite allergens from a mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
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i high molecular weight Dermatophagoides nucleic acid polypeptides to modify an animals' hypersensitivy to mite allergens.
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                                                                                                                                                                                               Claim 3; Page 147-149; 154pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 82.59
Matches 443; Conservative
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243 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPAKGMSPPGFITGEEGVLSYIEL 302
                                                   COLFOKBEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 381
                                                                     DFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTTTTPTTP 441
                                                                                                                      442 TITPSPITTPSPITTPSPITTPSPITPTPTPTPAPTISTPSPITTEHISETPKYTTYVD 501
                                                                                                                                                                                     502 GHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE 555
MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL
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|abel= Signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               label= Mature_protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                ABP72636 standard; protein; 525
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                                                                                                                                                                                                                                                                                                                                                                                             Anopheles gambiae chitinase
                                                                                                                                                                                                                                                                                                                                                                   (first entry)
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N-PSDB; ABZ81875.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Anopheles gambiae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO2003014150-A2
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     262
                                                                                                           382
                                                                                                                                                                                          416
                                                                                                                                                                                                                                                                                                                                          ABP72636;
                                                        322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein
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                                                                                                                                                                                                                                                                                       RESULT 11
                                                                                                                                                                                                                                                                                                     ABP72636
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                                                                                                                                                                                                                                            셤
                             임
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for aliciting an immune response or against Der HWW-map protein. The protein or a reagant comprising a nonproteinst Der HWW-map protein or a reagant comprising a nonproteinst susceptible to or having an allergic response to a mite. A therapeutic composition is useful for identifying an animal lituids, and inhibition allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the composition is useful for mainal fullids, and inhibition of immunoglobulin (Ig) or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to Igs, to prevent immunocomplex, formation, thus creducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96342 represent Der HWW-map polypeptides of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DPPODDNHNSWEKHGYERFNNLRLKUPELTTMISLGGWYEGSEKYSDMAANPTYRQQFVQ 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mite allergenic protein isolated from Dermatophagoides, designated HMW-map protein, useful as a vaccine for treating mite allergy.
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                                                                                                                           Der HAWW-map, American house dust mite; antiallergic; mite; IgB;
mite allergenic protein; immunoglobulin E; hypersensitivity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79.7%; Score 2475; DB 5; Length 490; 82.5%; Pred. No. 1.5e-171; ive 21; Mismatches 21; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 12; Page 144-146; 161pp; English.
                      AAU96339 standard; protein; 490 AA.
                                                                                                                                                                                                                                                                                                                                                Weber ER
                                                                                                                                                                                                                                                                 14-SEP-2001; 2001WO-US028730.
                                                                                                                                                                                                                                                                                           14-SEP-2000; 2000US-00662293
                                                                                                   Der HMW-map polypeptide #26
                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         443; Conservative
                                                                                                                                                                                  Dermatophagoides farinae
                                                                                                                                                         immunocomplex formation.
                                                                                                                                                                                                                                                                                                                                                Mccall CA, Hunter SW,
                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-351888/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                     (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; ABK69585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 490 AA;
                                                                                                                                                                                                            WO200222807-A2
                                                                         15-JUL-2002
                                                                                                                                                                                                                                       21-MAR-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                 AAU96339;
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The present sequence is that of the mosquito Anopheles gambiae chitinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Insecticide, pesticide, insect control, insect, toxin, chitinase, enzyme, neuropeptide, transgenic plant, crop protection, mosquito.
434 GHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIMDCPKGTRWHATLKNCIQE 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fusion protein useful for combating insect pests, comprises a translocating moiety comprising a plant protein capable of acting as carrier to translocate toxic moiety inside plant pathogen, and a toxi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       401. .466
/note= "serine/threonine/proline-rich domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "possible trypsin activation site"
150. .157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note= "possible trypsin activation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (UYDU-) UNIV DURHAM.
(ENVI-) DEPT ENVIRONMENT FOOD & RURAL AFFAIRS.
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Drosophila melanogaster.

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This protein is used in claimed fusion proteins of the invention. Such the translocating moiety and a toxic moiety, where the translocating moiety and a toxic moiety, where the translocating moiety is a plant protein (e.g. a lectin) capable of acting as a carrier to translocate the toxic moiety across the gut wall of a plant pathogen, and the toxic moiety is an insect-derived peptide or protein capable of causaing deleterious effects on growth, development, reproduction or mortality in pest insects. Suitable insect peptides and proteins include allatostatins, chitinase, diuretic hormone and their metabolites and analogues. Polymucleotides encoding the fusion protein, vectors, host cells and transgenic plants that are resistant to disease are also provided. The fusion protein is target-specific, and resists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FSAMAAAGELRKRFISDCVAFCQRHGFDGIDLDWEYPAQRDGNPLIDRDNHAQLVEEMRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183 EFDHYGLLLTAAVASVEFSAGVSYDIPRISKSFHFLNVMVYDMGAMDSYCGINAPLYRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VGRYTREPGVMGYNEFCEKLATEAWDLRWSEEQQVPYAVRNNOWVGYDDLRSVQLKVKYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 LSIMACIGLMNASIKRD-HNDYSKNPMRIVCYVGTWSVYHKVD-PYTIBDIDPFKCTHLM
                                                                                                                                                                                                                                                                                                                                                       YGFAKIDBYKYTIQVFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEK
                                                                                                                                                                                                                                                                                                                                                                                                                         YSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186 AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APTT-----STVAPGTTTTTTPTGANPGTTQPPT--SDAPNHTTTSTTTEGNPGTTRPPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITEHISETPKYTTYVDGHLIKCY--KEGDIPHPTNIHKYLVC------EFVNGGWWVH
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                                                                                                                                                                                                                                                                                                  59;
                                                                                                                                                                                                                                                                 525;
                                                                                                                                                                                                                                                               Length
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                                                                                                                                                                                                                                                                   DB 6;
                                                                                                                                                                                                                                                                                               93; Mismatches 187;
                                                                                                                                                                                                                                                               32.5%; Score 1008.5; DB 38.4%; Pred. No. 7.7e-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABB58595 standard; protein; 4498 AA.
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                                                                                                                                                                                                                                                                                 Local Similarity
les 211; Conserv
                                                                                                                                                                                                                                 Sequence 525 AA;
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367 AYRRNQWYGYDDEAIVRKKAEYVVAQGIGGIMFWAIDNDDFRGTCNGKPYPLIEAA---- 422
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----KEAMVEALGLGINEVAKPSGPOKPSRSRSRDNASNRNRLNGKTEAPLSSRRPSATR 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57
                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-interactions in higher eukaryotes for the development of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signaling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NGDEKNSFECILGPSTTTPTTTTPTTTPT------TPSPTT---PTTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 insecticides, therapeuties and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL36175) and the encoded proteins (ABBS7737-ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 KTIYAILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYH----KVDPYTIEDID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78 PYLCTHLVYAFGGFTKDNQMK----PFDKYQD-----IEQGGYAKFTGLKTYNKQLKTMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NYLALVRELKDAFEPHG-----YLLTAAVSPGKOKIDRAYDIKELNKLFDWMVMTYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            189 NYAQFVQELRAEFEREAEKTGRTRLILITMAVPAGIEYIDKGYDVPKINKYLDWFNVLTYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YHGGWENFYGHNAPLYKRPDETDELHTY---FNVNYTMHYYLNNGATRDKLVMGVPFYGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AWSIEDRSKIKLGDPAKGMSPPGFISGEEGVLSVIELCQLFQKE-EWH-IQYDEYYNAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC-GPKNPLLNKVHNMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 4498;
                                                                                                                                                                                                                                                                                                                                                       Disclosure; SEQ ID NO 2577; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27.5%; Score 854.5; DB 4; 33.8%; Pred. No. 2e-52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 188;
                                                                                                                                                                                                           EX
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                                                                                                                                                                                                           PWD,
                                                                                                                           23-MAR-2000; 2000US-0191637P
11-JUL-2000; 2000US-00614150
                                                                                            23-MAR-2001; 2001WO-US009231
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                                                                                                                                                                                                                                         2001-656860/75
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Best Local Similarity
Matches 202; Conserv
                                                                                                                                                                          (PEKE ) PE CORP NY
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                               WO200171042-A2
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                                                              27-SEP-2001
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3 ATLATLAVLALATAV-----QSDSRARIVCYFSNWAVYRPGVGRYGIEDIPVEKCTHI
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    ---PSPTTPTPTPTPAPTTSTPSPTTTEH 489
                                                                         999
                                                                                                                                                                                                                                plant; biological control; baculovirus; hookworm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sednence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gopalakrishnan B;
                                                                TSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFVNG----GWWVHIMPCPPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transgenic plant contg. recombinant insect chitinase coding useful for controlling plant pests.
                           479 RPAVSSTQAPP--PSTTPKLTBAEGSSLYIGGRASTTPPPPPTTPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Corpuz L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
27.0%; Score 838.5; DB 2;
Best Local Similarity 35.4%; Pred. No. 1.9e-52;
Matches 208; Conservative 79; Mismatches 210;
                                                                                                                                                                                                          Manduca sexta larva epidermal and gut chitinase.
                                                                                                                                                                                                                                                                                                                                                                                          'note= "proposed active site"
                                                                                                                                                                                                                                                                                                                                                      97. .111
/label= Conserved_region-I
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                                                                                                                                                                                                                                                                                                         1. 19
/label= Sig_peptide
                                                                                                                                                                                                                                                                                                                                           /label= Mat_protein
                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 37-40; 57pp; English.
                                                                                                                                      Ą
                                                                                                                                     AAW01824 standard; protein; 554
                                                                                                                                                                                                                                  Chitinase; insect; transgenic
biocide; insecticide; tobacco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UNIV ) UNIV KANSAS STATE RES
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      SPITPITISSITIFI---
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                                                                                                                                                                                    (first entry)
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N-PSDB; AAT62557.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 554 AA;
                                                                                                                                                                                                                                                                      Manduca sexta
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-SEP-1995;
                                                                                                                                                                                    27-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                          13-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                Active-site
                                                                                                                                                            AAW01824;
                                                     490
                                                                            523
                                                                                                                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                         Region
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                                                           183
124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New imaginal disc growth factor polypeptide, useful for healing wounds, promoting tissue growth, modulating female reproductive tract functions and treating cell proliferative disorders such as cancer and metastasis.
                  450 TITTAKPPQSVIDEENDINVRPEPKPEPQPEPEVEVP-PTENE-------VDGSEI
                                                           KYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL
                                                                                                                       KDAF---EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                                                                                          ----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTAKPASTTKTTVKTT
                                                                                                                                                                                                                                                                                                                                                                                                                           457 TTPTTTPSPTT-----PTP-TTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGHLI
                                                                               291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFOKEE--WHIOYDEYYNAPYGYNDKI
                                                                                                                                                                                                                                                                                                     349 WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS
                                                                                                                                                                                                                                                                                                                                                                409 FECILGPSTTTPTTTTTTTTTT-----TTPTTPS-----PTTPTTTPSPTTTPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Imaginal disc growth factor; IDGF; chitinase related protein; CHRP;
tissue growth; wound healing; bone repair; cartilage repair;
angiogenesis; meat production; milk production; cancer; gene therapy;
 MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFNNIRLKNPELTTMISLGGWYEGSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -CNSDQDYIPDKKHCDKYWRC--VNGE--AMQFSCQHGTVFNVELNVC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      506 KCYKEGD-IPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 552
                                                                                                                                                                                  LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-NOV-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (REGC ) UNIV CALIFORNIA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-MAR-1998;
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20;

91;

Indels

64

6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL

à

Insecticide; pesticide; insect control; insect; toxin; chitinase; enzyme;

neuropeptide, transgenic plant; crop protection

Manduca sexta

Manduca sexta chitinase

20. .554 | Jabel = Mature_protein | S5. .88 | /note= "Asn is N-glycosylated"

Modified-site

1. .19 /label= Signal_peptide location/Qualifiers

> Peptide Protein

303. .306 /note=__Asn is N-glycosylated" /note= "Asn is N-glycosylated"

138. .146

Modified-site Modified-site

Active-site

.548

545.

WO2003014150-A2

20-FEB-2003

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The present sequence is the protein sequence for the Manduca sexta gut chitinase. It was used to isolate the Drosophila metanogaster imaginal disc growth factor 4 (IDGF4) coding sequence. IDGF4 is a member of the chitinase related proteins (CHRP) and is involved in the promotion of call growth, motility and morphogenesis. The gene and protein are expected to have mammalian homologues. They can be used in the treatment of cancer, wound healing, tissue regeneration following arthritis, osteoporosis, other skeletal disorders and burns, for revitalising scartissue resulting from surgical procedures, irradiation, laceration, toxic chemicals, viral or bacterial infection or burns, to promote tissue growth during tissue engineering, for example tissues for skin graft replacements and bone regiowth, and to modulate the function of the female reproductive tract. In addition, they can also be used to increase meat, egg, sperm and milk production in animals. One possible method of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     497
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               390 NKEAGGGDPAPYTNATGF-----WAYYEICTEVDKDDSGWTKKWDEQGKCPYAYKGTQ 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTAKPASTTKTTVKTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         343 WVGYEDPRSVEIKMYWIKQKGYLGAMTWAIDMDDFQGLCGEKNPLIKIHKHMS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTPTTTPSPTT------PTP-TTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGHLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6 AILSIMACIGLMNASIKRDHNDYSKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 ATLATLAVLALATAV -----OSDSRARIVCYFSNWAVYRPGVGRYGIEDIPVEKCTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MYGFAKIDEYKYTIQVFDPYQDDNHNSWEKRGYERFINNLRLKNPELTIMISLGGWYEGSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                         27.0%; Score 838.5; DB 3;
35.4%; Pred. No. 1.9e-52;
ive 79; Mismatches 210;
                     Disclosure, Col 53-58; 40pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 35.4<sup>†</sup>
Matches 208, Conservative
                                                                                                                                                                                                                                                                                                                                                           use is by gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 554 AA;
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(UYDU-) UNIV DURHAM. (ENVI-) DEPT ENVIRONMENT FOOD & RURAL AFFAIRS.

06-AUG-2002; 2002WO-GB003598 08-AUG-2001; 2001GB-00019274 Edwards JP;

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Fitches

Gatehouse JA,

WPI; 2003-278469/27.

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The present sequence is that of Manduca sexta chitinase. This protein can be used in claimed fusion proteins of the invention. Such fusion proteins comprises a translocating moiety and a toxic moiety, where the translocating moiety is a plant protein (e.g. a lectin) capable of acting as a carrier to translocate the toxic moiety across the gut wall of a plant pathogen, and the toxic moiety is an insect-derived peptide or protein capable of causing deleterious effects on growth, development, reproduction or mortality in pest insects Suitable insect peptides and proteins include allatostatins, chitinase, diuretic hormone and their vectors, host cells and transgenic plants that are resistant to disease are also provided. The fusion protein is target-specific, and resists degradation in the insect gut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
Fusion protein useful for combating insect pests, comprises a translocating moiety comprising a plant protein capable of acting as a carrier to translocate toxic moiety inside plant pathogen, and a toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 ATLATLAVLALATAV-----QSDSRARIVCYFSNWAVYRPGVGRYGIEDIPVEKCTHI
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                                                                                                                                                                   Claim 7; Fig 10; 51pp; English.
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Matches 208; Conservative
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Best Local Si
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ABP72619 standard; protein;

RESULT 15 ABP72619

498

(first entry)

11-JUN-2003

ABP72619;

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L KYSHMVAQKSTRMSFIRSVVSFLKKYDFDGLDLDWEYPGAADRGGSFSDKDKFLYLVQEL 170	KDAF EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMW	: :	LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVNGVPFYG		RSKLKLGDPAKGMSPPGFISGEEGVISYIELCOLFOKEE-WHIOYDEYYNAPYGYNDKI 348	NKEAGGGDPAPYTNATGFWAYYELCTEVDKDDSGWTKKWDEQGKCPYAYKGTQ 342	WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF	- KB - KB - KB	FECILGESTITEPTPITTPT 456	7SYTVPPPHTENTIPTPEWARPPSTPSDPSEGDPIPTTTTAKPASTTKTTVKTT 449	7 TTPTTTPSPTTPTP-TTPTPAPTTSTPSPTTTEHTSETPKYTTYUDGHLI 505	TTTAKPPQSVIDEENDINVRPEPKPEPQPEPEVEVP-PTENSVDGSEI 497	S KCYKEGD-IPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 552	498 -CNSDQDYIPDKKHCDKYRRCVNGEAMQFSCQHGTVFNVELNVC 540
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March 22, 2004, 06:59:34; Search time 113.53 Seconds (without alignments) 1265.926 Million cell updates/sec
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1 MKTIYAILSIMACIGLMNAS.....IMPCPPGTIWCQEKLTCIGE 555
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Perfect score:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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Description	Sequence 15, Appl	Segmence 18, Appl	Sequence 21, Appl	Sequence 35, Appl	Sequence 38, Appl	41,	10	ď	Seguence 4, Appli	4	ο,	14.	Sequence 15. Appl	14	Sequence 1, Appli
ΩΙ	US-10-218-743-15	US-10-218-743-18	US-10-218-743-21	US-10-218-743-35	US-10-218-743-38	US-10-218-743-41	US-10-004-219B-10	US-10-161-547-2	US-10-004-219B-4	US-10-161-547-4	US-10-004-219B-9	US-10-161-547-14	US-10-161-547-15	US-10-004-219B-14	US-10-004-219B-1
DB	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Length	555	553	536	509	509	490	445	466	473	466	452	373	373	455	476
% Query Match	0	100.0	97.0	81.8	81.8	79.7	23.8	23.8	23.7	23.6	23.5	23.2	23.2	22.8	22.8
Score	3107	3107	3014	2542	2542	2475	738	738	736.5	732	729.5	721.5	721.5	708.5	708.5
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ALIGNMENTS

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RESULT 1

US-10-218-743-15

Squence 15, Application US/10218743

Publication No. US2030096779A1

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: McDer, Eric R.

APPLICANT: McDer, Eric R.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE REFERENCE: AL-2-C3

CURRENT FILING DATE: 2002-08-13

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PRIOR FILING DATE: 1998-04-17

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J GENERAL 18 Application US/10218743

Fublication No. US20030096779A1

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine W.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: AND USES THEREOF

FILE REFERENCE: AL-2-C3

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100.0%; Score 3107; DB 14; Length 555;
Best Local Similarity 100.0%; Pred. No. 3e-220;
Matches 555; Conservative 0; Mismatches 0; Indels 0;
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APPLICANT: McCall, Catherine A.
APPLICANT: Hunter, Shirley Wu.
APPLICANT: Weber, Eric R.
ITILE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROT
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROT
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT FAPLICATION NUMBER: US/09/292,225
FRIOR PAPLICATION NUMBER: US/099,909
PRIOR PILING DATE: 1998-04-15
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PRIOR FILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 21
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Publication No. US20030096779A1
GENERAL INFORMATION:
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US-10-218-743-21
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Deblication No. US200309677941

Sequence 35, Application US/10218743

Publication No. US200309677941

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: Weber, Exic R.

ITILE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TILLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TILLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

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TILLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TILLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEING DATE: 1998-04-15

PRIOR PLILING DATE: 1998-04-15

PRIOR FILING DATE: 1998-04-17

PRIOR PLILING DATE: 1998-04-17

PRIOR PRIOR PLILOGATION NUMBER: 60/098, 565

PRIOR PLILOGATION NUMBER: 60/098, 565

PRIOR PRIOR DATE: 1998-04-17

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Best Local Similarity 100.0%; Pred. No. 2e-213; Matches 536; Conservative 0; Mismatches 0; Indels
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Pred. No. 1e-178;
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; ORGANISM: Dermatophagoides farinae
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                                            61 CTHLMYGFAKIDEYKYTIQVFDPPQDDNHNSWEKHGYERFNNLRLKNPELTTMISLGGWY
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 Gaps
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26;
 Mismatches
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| Sequence 41, Application US/10218743
| Publication No. US2030096779A1
| GENERAL INFORMATION:
| APPLICANT: McGall, Catherine A. |
| APPLICANT: Hunter. Shirley Wu | APPLICANT: Weber, Eric R. |
| TITLE OF INVENTION: AND USES THEREOF |
| FILE REPERROCE: AL-2-03 |
| CURRENT APPLICATION NUMBER: US/10/218,743 |
| CURRENT APPLICATION NUMBER: US/09/292,225 |
| PRIOR APPLICATION NUMBER: 60/098,909 |
| PRIOR FILING DATE: 1999-04-15 |
| PRIOR FILING DATE: 1998-04-15 |
| PRIOR FILING DATE: 1998-04-15 |
| PRIOR FILING DATE: 1998-04-15 |
| PRIOR FILING DATE: 1998-04-17 |
| PRIOR FILING DATE: 1998-04-17 |
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| PRIOR FILING DATE: 1998-04-17 |
| PRIOR FILING DATE: 1998-04-17 |
| NUMBER OF SEQ ID NOS: 49 |
| SOFTWARE: Patentin Ver. 2.0 |
| SEQ ID NO 41
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                                       Gaps
                                    52;
         Length 509;
                                      Indels
    2; DB 14;
1e-178;
ches 26;
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       Query Match
Best Local Similarity 81.7%; Pred. No. 1e-1
Matches 456; Conservative 24; Mismatches
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CURRENT APPLICATION NUMBER: US/10/004,219B
SOFTWARE: PATENTION DATE: 201-11-02
SOFTWARE: PATENTING DATE: 201-11-02
                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                      142 SVIDFLOEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFFEPHGYLLIAAVSPG 201
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                                                                                                                                                          3 KRDHNNYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
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                                                                                                                 22 KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDBYKYTIQVF
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  Length 490;
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                                                       Indels
Query Match 79.7%; Score 2475; DB 14; Best Local Similarity 82.5%; Pred. No. 8.4e-174; Matches 443; Conservative 21; Mismatches 21;
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Pred. No. 5.3e-46;
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; OTHER INFORMATION: /note="Human chitotriosidase"
US-10-004-219B-10
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ORGANISM: Homo sapiens
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Best Local Similarity
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----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRP 246
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                              205 IDRAYDIKELNKLFDWMNWHYDYHGGWENFYGHNAPLYKRPDETDELHTYFNNNYTWHY 264
                                                                                                                                              265 YINNGATRDXLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
                                                                                                                                                                                   325 FOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
                                                                                                                                                                                                                                                                                                        385 GHCGPXNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTTTTPTTTFTTT 444
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) Publication No. US20030087414A1
) GENERAL INFORMATION:
APPLICANT: Macrozyme
APPLICANT: Boct, Rolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: to use in therapy or prophylaxis against diseases in TITLE OF INVENTION: which mucus is involved or infection diseases in TITLE REPREBUCE: 2183-5136US
CURRENT APPLICATION NUMBER: US/10/004,219B
) CURRENT FILING DATE: 2001-11-02
) NUMBER OF SEQ ID NOS: 14
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                                                             191 VDAGYEVDKIAQNLDFVNLMAXDFHGSWEKVTGHNSPLYKRQEESGAAAS-LNVDAAVQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: Description of Artificial Sequence: mouse AMCase; OTHER INFORMATION: amino acid sequence deduced from cDNA sequence US-10-004-2198-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ::
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23.7%; Score 736.5; DB 14; Length
Best Local Similarity 36.3%; Pred. No. 7.4e-46;
Matches 158; Conservative 72; Mismatches 148; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  445 PSPTTPTTTPSPTTPTTTPSPTTPT 469
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ORGANISM: Artificial Sequence
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US-10-004-219B-4
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LENGTH: 473
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                                                                                                                                                                                                                                                                                                                                       289 KGATKQRIQ-DQ--KVPYIPRDNQWYGFDDVBSPKTKVSYLKQKGLGGAMVWALDLDDPA 345
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                                                                                                                                                                                                                  FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
                                                                                                                                                                                                                                                                                                                                                                                                                           IDRAYDIKELNKIFDWMWWTYDYHGGWENFYGHNAPLYKRPDETDELHTYFWWYTMHY 264
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                                                                                                                                                                                - EKRGYERFINNIRLKUPELTITMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFLOEYK 151
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                                                          RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
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   58; Gaps
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Publication No. US20030143216A1

GENERAL INPORMATION:

APPLICANT: Gray, Patrick W.

TITLE OF INVENTION: CHITINABE CHITIN-BINDING FRAGMENTS

FILE REFERENCE: 27866/35407

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT PILING DATE: 2002-06-03

PRIOR PILING DATE: 1999-03-12

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/039,198

PRIOR PILING DATE: EARLIER FILING DATE: 1998-03-12

PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39
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                                                                                                                  KLVCYFTNWAQYRQGEARFLPKDLDPSLCTHLIYAFAGMTNHQLST---
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Mismatches 150; Indels
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Best Local Similarity 34.24
Matches 152; Conservative
Conservative
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US-10-161-547-2
   152;
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US-10-161-547-2
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310 KGATKQRIQ-DQ--KVPYIFRDNQWVGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDFA 366
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292 GAYTRQAGFWAYYEICTFLRSGATEVW----DASQEVPYAYKANEWLGYDNIKSFSVKAQ 347
                                                               -----LGISTE 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34 RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364 FLKELGVSGVMVWSLENDDFKG-HCG----PKNPLLNKVHNMINGDEKNSFECILGPSTT
                                                                                                                                                                                                                                                             APPLICANT: Gray, Partick W.
APPLICANT: Tjoelker, Larry W.
TITLE OF INVANTION: CHITINASE CHITIN-BINDING FRAGMENTS
TITLE OF INVANTION: CHITINASE CHITIN-BINDING FRAGMENTS
FILE REFERENCE: 27866/35407
CURRENT APPLICATION NUMBER: US/10/161,547
CURRENT FILING DATE: 2002-06-03
FRIOR APPLICATION NUMBER: US/30/267,574
FRIOR FILING DATE: 1999-03-12
FRIOR FILING DATE: BARLIER FILING DATE: 1998-03-12
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 4
LENGTH: 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58;
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                                                   348 WLKQNNFGGAMIWAIDLDDFTGSFCDQGKFPLTSTLNKA---
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Best Local Similarity 33.9%; Pred. No. 1.6e-45;
Matches 151; Conservative 85; Mismatches 151;
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                                                                                                                                                                                 RESULT 10
US-10-161-547-4
i Sequence 4, Application US/10161547
i Publication No. US20030143216A1
i GENERAL INPORMATION:
                                                                                                  419 TPTPTTTPTTTP 433
                                                                                                                                 393 GCTAPDVPSEPVTTP 407
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RESULT 11 US-10-004-219B-9

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                                                                                       APPLICANT: Macrozyme APPLICANT: Macrozyme APPLICANT: Macrozyme APPLICANT: Aerts, Johannes M.F.G. APPLICANT: Aerts, Johannes M.F.G. APPLICANT: Aerts, Johannes M.F.G. TITLE OF INVENTION: Rolf G. TITLE OF INVENTION: its use in therapy or prophylaxis against diseases in TITLE OF INVENTION: Which mucus is involved or infection diseases in TITLE OF INVENTION: Which mucus is involved or infection diseases our RIENT REPRENCE: 2183-5136VS CURRENT APPLICATION NUMBER: US/10/004,219B NUMBER OF SEQ ID NOS: 14 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93 EKRGYERFINILRLKNPELITMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFLOEYKF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    153 DGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDKI
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Sequence 14, Application US/10161547

Sequence 14, Application US/10161547

Publication No. US20030143216A1

GENERAL INFORMATION:

APPLICANT: Gray, Patrick W.

APPLICANT: Gray, Patrick W.

TILLE OF INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS

FILE REFERENCE: 27066/3540

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT APPLICATION NUMBER: US/09/267,574

PRIOR FILING DATE: 1999-03-12

PRIOR PILING DATE: BARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:

NAME/KEY:

LOCATION: (1)..(452)

CTHER INFORMATION: /note="Mouse AMCase"
US-10-004-219B-9
   US/10004219B
Sequence 9, Application US/1000 Publication No. US20030087414A1 GENERAL INFORMATION:
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Best Local Similarity 37.03
Matches 154; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT ORGANISM: Mus musculus
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Squence 14, Application US/10004219B

| Squence 14, Application No. US2030087414A1
| Publication No. US2030087414A1
| GENERAL INFORMATION:
| APPLICANT: Macrozyme
| APPLICANT: Macrozyme
| APPLICANT: Boot, Rolf G.
| TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
| TITLE OF INVENTION: Which mucus is involved or infection diseases
| TITLE OF INVENTION: Which mucus is involved or infection diseases
| TITLE OF INVENTION WHERE: US/10/004,219B
| CURRENT APPLICATION NUMBER: US/10/004,219B
| CURRENT PILING DATE: 201-11-02
| NUMBER OF SEQ ID NOS: 14
| SOFTWARE: PatentIn Ver. 2.1
| SEQ ID NOS: 10
                                                                                                                                          289 KGATKQRIQ-DQ--KVPYIFRDNQWVGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDFA 345
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                                                                 51 NDETLYQEFNGLKKMNPKLKTLLAIGGWNFGTQKFTDMVATANNRQTFVNSAIRFLRKYS 110
                                                                                                                                                                                                 YLANACATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
                                                                                                                                                                                                                                                                                325 FOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
                                        FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
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                                                                                                                      205 IDRAYDIKELNKLFDWMVWTYDYHGGWENPYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 22.8%; Score 708.5; DB 14; Length Best Local Similarity 35.9%; Pred. No. 8.1e-44; Matches 149; Conservative 75; Mismatches 154; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; LOCATION: (1)..(455)
; OTHER INFORMATION: /note="Human AMCase"
US-10-004-219B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Homo sapiens
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                                                                                                                                                                                                                                                                                                                         YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
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                                                                                                                                                                                                                                                                                                     - EKRGYERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDFLQEYK 151
                                                                                                                                                                                                                                                                                                                                                                                  FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY 264
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APPLICANT: Tjoekker, Larry W.
TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS
FILE REFERENCE: 27866/35407
CURRENT APPLICATION NUMBER: US/10/161,547
CURRENT FILING DATE: 2002-06-03
PRIOR APPLICATION NUMBER: US/09/267,574
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PATENTIN VOYE: 2.0
SEQ ID NO 15
LENGTH: 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 23.2%; Score 721.5; DB 14; Length 373; Best Local Similarity 37.7%; Pred. No. 6.9e-45; Matches 136; Conservative 83; Mismatches 117; Indels 25;
                                                                                                                                                                                   25;
                                                                                                                                          23.2%; Score 721.5; DB 14; Length 373; 37.7%; Pred. No. 6.9e-45; tive 83; Mismatches 117; Indels 25;
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Publication No. US20030143216A1
GENERAL INFORMATION:
                                                                                                                                                                                   Conservative
      SOFTWARE: Patentin Ver.
SEQ ID NO 14
LENGTH: 373
TYPE: PRT
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US-10-161-547-14
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385
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Best Local Simi
Matches 136;
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RESULT 15
US-10-004-219B-1
Sequence 1, Application US/10004219B
Sequence 1, Application US/20030087414A1
GENERAL INFORMATION
APPLICANT: Macrozyme
APPLICANT: Macrozyme
APPLICANT: Boot, Rolf 6
TITLE OF INVENTION: its use in therapy or prophylaxis against diseases in TITLE OF INVENTION: which mucus is involved or infection diseases in FILE REFERENCE: 2183-5136US
CURRENT APPLICATION NUMBER: US/10/004,219B
CURRENT FILING DATE: 2001-11-02
NUMBER OF SEQ ID NOS: 14
SEQ ID NO 1
SEQ ID NO 1
SEQ ID NO 1
SEQ ID NO 1
SEG ID NO 1
SEG ID NO 1
SEG ID NO 1
SEG ID NO 1
SEG ID NO 1
SEG ID NO 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93 -EKRGYERFINNLRLKOPELTIMISLGGWYEGSEKYSDMAANPIYRQOFIQSVLDFLOBYK 151
                             288 FLKNGATQGWDAPQEVPYAYQGNVWVGYDNIKSFDIKAQWLKHNKFGGAMVWAIDLDDFT 347
325 FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34 RIVCYVGTWSVYHK-VDPYTIBDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW 92
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                                                                                         385 G-HCGP-KNPLLNKVHNMINGDEKNSFECILGPSTITPTFTTTFTTFTTPS 437
                                                                                                                         348 GTFCNQGKFPLI------STLKKALGLQSASCTAPAQPIEPITAAPSGS 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE: OTHER INFORMATION: Description of Artificial Sequence: human AMCase OTHER INFORMATION: amino acid sequence deduced from cDNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37;
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22.8%; Score 708.5; DB 14; Length 476;
Best Local Similarity 35.9%; Pred. No. 8.6e-44;
Matches 149; Conservative 75; Mismatches 154; Indels 37;
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(without alignments)
1265.926 Million cell updates/sec
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1 SIKRDHNDYSKNPMRIVCYV.....IMPCPPGTIWCQEKLTCIGE 536
                                                                                                                                  March 22, 2004, 06:59:34; Search time 109.643 Seconds
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                        1049977 segs, 258955339 residues
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Maximum Match 100%
Listing first 45 summaries
                                                                                        OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seg length: 200000000
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                                                                                                                                                                                                                          Title:
Perfect score:
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Published Applications AA:*

1: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/USO6_NEW PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/USO6_NEW PUB.pep:*
5: /cgn2_6/ptodata/2/pubpaa/USO6_NEW PUB.pep:*
5: /cgn2_6/ptodata/2/pubpaa/USO7_NEW PUB.pep:*
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19: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl:	Appli	Appli	Appli	Appl	Appl	Appl	Appli
		21,	15,	18,	41,	35,	38,	10,	7	4	6	4	14,	15,	14,	ų,
	Description	Sequence 21	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
	ID	US-10-218-743-21	US-10-218-743-15	US-10-218-743-18	US-10-218-743-41	US-10-218-743-35	US-10-218-743-38	US-10-004-219B-10	US-10-161-547-2	US-10-161-547-4	US-10-004-219B-9	US-10-004-219B-4	US-10-161-547-14	US-10-161-547-15	US-10-004-219B-14	US-10-004-219B-1
	DB	14	14	7	14	14	14	14	14	14	4	14	14	14	14	14
	Query Match Length DB	536	555	555	490	509	509	445	466	466	452	473	373	373	455	476
dе	Query Match	100.0	100.0	100.0	82.1	82.1	82.1	24.5	24.5	24.3	24.2	24.2	23.9	23.9	23.5	23.5
	Score	3014	3014	3014	2475	2475	2475	738	738	732	729.5	729.5	721.5	721.5	708.5	708.5
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674	Sequence 1900, Ap	45,	Sequence 270, App		Seguence 278, App			Sequence 20271, A							18		19	33	e 1684,	18585,	Sequence 47084, A	equence 273219	Sequence 8158, Ap	12804,		Sequence 8244, Ap		equence
93-6	US-10-094-749-1900	40-4	27	90-1	27-2	US-10-373-802-2	93-1	93-2	93-1	93-1	a	99-2	US-10-369-493-3399	US-09-923-844B-2	93-1	US-10-316-754-11	54-1	93-330	93-168	US-10-369-493-18585	US-10-425-114-47084	US-10-424-599-273219	US-10-369-493-8158	US-10-369-493-12804	US-10-369-493-3089	US-10-369-493-8244	US-10-156-761-10415	US-10-156-761-14446
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617	457	383	383	383	385	423	599	407	428	392	351	366	485	371	546	399	399	449	511	572	358	365	567	789	445	462	607	427
23.4	22.0	21.9	21.9	21.6	20.9	20.9	19.5	17.3	17.1	15.6	15.2	14.4	13.8	13.5	13.4	13.3	13.3	12.4	12.2	11.7	11.6	11.6	11.5	11.2	10.9	10.5	10.4	10.3
705.5	662.5	099	660	650	630	630	588	521.5	516	471	458	434.5	414.5	406	405	401.5	401.5	372.5	367.5	352.5	350.5	350.5	347.5	337	329.5	317.5	313.5	311.5
16	- 8 - T	19	20	21	22	23	24	25	26	27	28	50	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

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GARBEAL INCORDATION:

APPLICANT: MCCALL.
APPLICANT: MCCALL.
APPLICANT: HULTER, Shirley Wu
APPLICANT: HULTER, Shirley Wu
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT PELING DATE: 1099-04-15
CURRENT FILING DATE: 1999-04-15
PRIOR APPLICATION NUMBER: 60/098,909
PRIOR PELING DATE: 1998-09-02
PRIOR PELING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
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PRIOR PELING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
SEQ ID NOS: 49
SOFTWARE PARENTIN VET: 2.0
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Best Local Similarity 100.0%; Pred. No. 1.2e-212;
Matches 536; Conservative 0; Mismatches 0; Indels 0;
Sequence 21, Application US/10218743; Publication No. US20030096779A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Dermatophagoides farinae US-10-218-743-21
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US-10-218-743-18
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Publication No. US20030096779A1
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general information;
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-25
CURRENT APPLICATION NUMBER: US/10/218,743
CURRENT FILING DATE: 1999-08-13
FRIOR FILING DATE: 1999-09-13
FRIOR PRILNG DATE: 1998-09-13
FRIOR APPLICATION NUMBER: 60/098,505
FRIOR APPLICATION NUMBER: 60/098,505
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FRIOR APPLICATION NUMBER: 60/098,505
FRIOR APPLICATION NUMBER: 60/098,505
FRIOR APPLICATION NUMBER: 60/098,505
FRIOR PILING DATE: 1998-04-17
FRIOR FILING DATE: 1998-04-17
FRIOR APPLICATION NUMBER: 60/080,2013
FRIOR FILING DATE: 1998-04-17
FRIOR FILING DATE: 1998-04-17
FRIOR APPLICATION NUMBER: 60/080,2013
FRIOR FILING DATE: 1998-04-17
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FRIOR APPLICATION NUMBER: 60/080,000
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                                                             61 VFDPYQDDNHNSWEKRGYBRFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF
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100.0%; Score 3014; DB 14;
Best Local Similarity 100.0%; Pred. No. 1.3e-212;
Matches 536; Conservative 0; Mismatches 0;
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US-10-218-743-15
Sequence 15, Application US/10218743
; Publication No. US2003009677981
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FUDILCALION NO. USCUUSUUS6/941
GENERAL INPORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Hunter Shirley Wu
APPLICANT: WEELS ENTIEVE WILL
ITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: ALL-2-3
CURRENT APPLICATION NUMBER: US/10/218,743
CURRENT APPLICATION NUMBER: US/09/292,225
PRIOR FILING DATE: 1999-09-02
PRIOR FILING DATE: 1999-09-02
PRIOR FILING DATE: 1998-09-03
PRIOR FILING DATE: 1998-09-03
PRIOR FILING DATE: 1998-04-17
PRIOR PELING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: PALENTIN VUMBER: 09/662,013
PRIOR FILING DATE: 1998-04-17
INVERSE OF SEQ ID NOS: 49
SOFTWARE: PALENTIN VUMBER: 09/662,013
FILING DATE: 1998-04-17
INVERSE OF SEQ ID NOS: 49
SEQ ID NO 18
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80 VFDPYQDDNHNSWEKRGYERFNNIRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOF
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100.0%; Pred. No. 1.3e-212;
tive 0; Mismatches 0; Indels
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Sequence 35, Application US/10218743
Publication No. US20030096779A1
GENERAL INFORMATION:
APPLICANT: Mcall, Catherine A.
APPLICANT: Hunter, Shirley Wu
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL-2-C3
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                                                                                                                                                                                                                                                                                                                                                              CQLPQKEBWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 362
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                                                                                  MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL 302
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                                                  SVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG 182
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                                                                                                                                                          183 KOKIDRAYDIKELNKUFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYT
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CURRENT APPLICATION NUMBER: US/10/218,743
CURRENT FILING DATE: 2002-08-13
PRIOR APPLICATION NUMBER: US/09/292,225
PRIOR FILING DATE: 1999-04-15
PRIOR FILING DATE: 1999-00-02
PRIOR FILING DATE: 1998-09-02
PRIOR PILING DATE: 1998-05-13
PRIOR PLING DATE: 1998-04-17
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR APPLICATION NUMBER: 60/098,565
PRIOR FILING DATE: 1998-04-17
PRIOR FILING DATE: 1998-04-17
PRIOR FILING DATE: 1998-04-17
SOFTWARE: PALENTING VATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SOFTWARE: PALENTIN VET: 2.0
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US-10-218-743-35
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Sequence 41, Application US/10218743

Publication No. US2000096779A1

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: Weber, Eric R.

ITILE OF INVENTION: MOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS

ITILE OF INVENTION: AND USES THEREOF

FILE SEPERAENCE: AL-2-C3

CURRENT APPLICATION NUMBER: US/10/218,743

CURRENT FILING DATE: 1999-04-15

PRIOR APPLICATION NUMBER: 60/096,909

PRIOR PILING DATE: 1998-04-15

PRIOR PILING DATE: 1998-06-13

PRIOR PLICATION NUMBER: 60/098,565

PRIOR PLICATION NUMBER: 60/098,565

PRIOR PLING DATE: 1998-04-17

PRIOR PLING DATE: 1998-04-17

PRIOR PLING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR PLING DATE: 1998-04-17

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR APPLICATION NUMBER: 09/062,013

PRIOR APPLICATION NUMBER: 09/062,013

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  VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDWAANPTYRQQF
                                                                                                                  IQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS
                                                                                                                                                                                                                                                                                                                              YTWHYYLINIGATRDKIJWGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEBGVLSYI
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Sequence 10, Application US/10004219B

Sequence 10, Application US/10004219B

Publication No. US20030087414A1

GENERAL INFORMATION:

APPLICANT: Macrozyme

APPLICANT: Aerts, Johannes M.F.G.

APPLICANT: Boot, Rolf G.

TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and

TITLE OF INVENTION: which mucus is involved or infection diseases in TITLE OF INVENTION: which mucus is involved or infection diseases CURRENT APPLICATION NUMBER: US/10/004,219B

CURRENT FILING DATE: 2001-11-02

NUMBER OF SEQ ID NOS: 14

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 10

LENGTH: 445

TYPE: PRT.
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                                                                                                                                                                   MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL 302
                                                                                                                                                                                                                                              CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 362
                                                                                                                                                                                                                                                                                                                             363 DFKGHCGPKNPLLNKVHNMINGDEKNSPECILGPSTTTPTFTTFTTFTTFTTFTTFT 422
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123 SVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          453 GHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIMDCPKGTRWHATLKNCIQE 509
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                                                                               KDKIDRAYDIKELNKI PDWMVMTYDYHGGWENFYGHNAPLYKR PDETDELHTYFNVNYT
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FEATURE:
NAME/KEY: SITE
LOCATION: (1) .. (445)
OTHER INFORMATION: /note="Human chitotriosidase"
US-10-004-219B-10
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Best Local Similarity
Matches 152; Conserva
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PUBLICATION NO. USE 0030096779A1

GENERAL INFORMATION:

APPLICANT: MCCall, Catherine A.

APPLICANT: MCCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

APPLICANT: McCall, Catherine A.

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES,

FILE REFERENCE: AL-2-C3

CURRENT PAPLICATION NUMBER: US/10/218,743

CURRENT PILING DATE: 1999-04-15

PRIOR FILING DATE: 1999-04-15

PRIOR FILING DATE: 1998-09-05

PRIOR FILING DATE: 1998-09-05

PRIOR PLING DATE: 1998-09-13

PRIOR PLING DATE: 1998-04-17

PRIOR PLING DATE: 1998-04-17

PRIOR PLING DATE: 1998-04-17

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PRIOR PLING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE: PATENTIN VET: 2.0

SOFTWARE: PATENTIN VET: 2.0
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                                                                                                                                                                                                       CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMIWSLEND 381
                                                                                                                                                                                                                                                                                                                                                                        DFKGHCGPKYPLLNKVHNMINGDERNSYECLIGPSTTTPFTFTFTTFT----- 434
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                                                                                                                        MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL 302
                                                                                                                                                                                                                                                                 CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 362
                                                                                                                                                                                                                                                                                                                                                DFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTITPTFTTTFTTFTTFTTPSPTTP 422
                                                                                                                                                                                                                                                                                                                                                                                                                                    TITPSPITIPITIPSPITFITPSPITFFITPTPAPITSTPSPITIEHTSETPKYTTYVD 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             483 GHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE 536
                                                                                                KDKI DRAYDI KELNKI PDWMNYMTYDYHGGWENFYGHNAPLYKR PDETDELHTY FNVNYT
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82.1%; Score 2475; DB 14;
Best Local Similarity 82.5%; Pred. No. 3.8e-173;
Matches 443; Conservative 21; Mismatches 21;
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; ORGANISM: Dermatophagoides farinae
US-10-218-743-38
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Best Local Similarity
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US-10-218-743-38
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PSPTTPTTTPSPTTPSPTTPT 450
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                 426 PSPTTPTTTPSPTTPSPTTPT
                                             395 PELEVP-KPGQPSEPEHGPSPGQDT
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APPLICANT: Macrozyme; APPLICANT: Aerts, Johannes M.F.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           367 G------
                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-161-547-4
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US-10-004-219B-9
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                                                                                             365
                                                                                                               425
                                                                                                                                                                                      -----FSCNQG-----RYPLIQTLRQELSLPYLPSGT 373
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 305
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170 VDAGYEVDKIAQNLDFVNLMAYDFHGSWEKVTGHNSPLYKRQEESGAAAS-LNVDAAVQQ 228
                                                  306 FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK
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Bublication No. US20030143216A1

GENERAL INFORMATION:

APPLICANT: Ticelker, Larry W.

TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS

FILE REFERENCE: 27866/35407

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT FILING DATE: 2002-06-03

PRIOR PILING DATE: 1999-01-12

PRIOR FILING DATE: 1999-01-12

PRIOR FILING DATE: BARLIER PILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39

SOFTWARE: PatentIN Ver. 2.0
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Similarity 34.2%;
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Matches 152;
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Best Local (
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74 -EKRGYERFINILALKNPELTTMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFLOEYK 132
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Sequence 4, Application US/10161547

Sequence 4, Application US/10161547

Publication No. US20030143216A1

GENREAL INFORMATION:
APPLICANT: Gray, Patrick W.
TITLE CO INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS

FILE REPERENCE: 7866/35407

CURRENT APPLICATION NUMBER: US/10/161,547

CURRENT FILING DATE: 1999-067,574

PRIOR APPLICATION NUMBER: US/209/267,574

PRIOR APPLICATION NUMBER: EARLIER PILING DATE: 1998-03-12

PRIOR PILING DATE: BARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39

SOPTWARE: Patentin Ver. 2.0
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24.3%; Score 732; DB 14;
Best Local Similarity 33.9%; Pred. No. 2.3e-45;
Matches 151; Conservative 85; Mismatches 151;
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APFLICANT: Boot, Rolf G.
TITLE OF INVENTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: its use in therapy or prophylaxis against diseases;
TITLE OF INVENTION: which mucus is involved or infection diseases;
FILE REPERENCE: 2183-5136US
CURRENT APPLICATION NUMBER: US/10/004,219B
CURRENT FILING DATE: 2001-11-02
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 9
INNORM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     230 KNNGAPAEKLIVGPPEYGHTFILRNPSDNGIGAPTSGDGPAGAYTRQAGFWAYYEICTFL 289
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Publication No. US20030087414A1
GENERAL INFORMATION:
APPLICANT: Macrosyme
APPLICANT: Macrosyme
APPLICANT: Macrosyme
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APPLICANT: Macrosyme
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APPLICANT: Macrosyme
APPLICANT: Macrosyme
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APPLICANT: Macrosyme
APPLICANT: Macrosyme
APPLICANTION: A mammalian mucinase, its recombinant production, and
TITLE OF INVENTION: which mucinase, its recombinant production, and
TITLE OF INVENTION: which mucinas is involved or infection diseases in
TITLE APPLICATION NUMBER: US/10/004,219B
CURRENT FILING DATE: 201-11-02
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PatentIn Ver. 2.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                    i LOCATION: (1)..(452)
i OTHER INFORMATION: /note="Mouse AMCase"
US-10-004-219B-9
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                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Mus musculus
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US-10-004-219B-4
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TYPE: PRT ORGANISM: Artificial Sequence FEATURE:

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   407
; OTHER INFORMATION: Description of Artificial Sequence: mouse AMCase; CTHER INFORMATION: amino acid sequence deduced from cDNA sequence US-10-004-219B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 14, Application US/10161547

Publication No. US20030143216A1

Publication No. US20030143216A1

APPLICANT: Gray, Patrick W.

APPLICANT: Tjoelker, Larry W.

ITILE OF INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS

FILE REFERENCE: 27866/35407

CURRENT FILING DATE: 2002-06-03

PRIOR APPLICATION NUMBER: US/09/267,574

PRIOR APPLICATION NUMBER: US/09/267,574

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/039,198

PRIOR FILING DATE: EARLIER FILING DATE: EARLIER PILING DATE: EARLIER PILING DATE: EARLIER FILING DATE: EARLIER FILING DATE: 1998-03-12

NUMBER OF SEQ ID NOS: 39
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                                                                                                       Length
                                                                                                     24.2%; Score 729.5; DB 14; Length 37.0%; Pred. No. 3.6e-45; ive 69; Mismatches 144; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   367 FIGSFCDQGKFPLTSTLNKA----
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                                                                                                          Query Match
Best Local Similarity 37.0
Matches 154; Conservative
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TYPE: PRT
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RESULT 14
US-10-004-219B-14

is Sequence 14, Application US/10004219B

sequence 14, Application US/10004219B

publication No. US20030087414A1

GENERAL INFORMATION:

APPLICANT: Macrozyme

APPLICANT: Macrozyme

TITLE OF INVENTION: is use in therapy or prophylaxis against diseases in TITLE OF INVENTION: is use in therapy or prophylaxis against diseases in TITLE OF INVENTION: which mucus is involved or infection diseases in TITLE REFERENCE: 2183-5136US

CURRENT APPLICATION NUMBER: US/10/004,219B

CURRENT PILING DATE: 2001-11-02

NUMBER OF SEQ ID NOS: 14

SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74 - EKRGYERFINILALKNPELTIMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDFLQEYK 132
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23.5%; Score 708.5; DB 14; Length 35.9%; Pred. No. 1.2e-43; ive 75; Mismatches 154; Indels
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2 OTHER INFORMATION: /note="Human AMCase"
US-10-004-219B-14
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APPLICANT: Aerts, Johannes M.F.G.
APPLICANT: Boot, Rolf G.
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Best Local Similarity 35.9%
Matches 149; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Homo sapiens
      346 G 346
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US-10-004-219B-1
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                                                                                                                                                                                                                                                       289 KGATKQRIQ-DQ--KVPYIFRDNQWYGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDFA 345
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                                                               186 IDRAYDIKELNKIPDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                       15 RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Gray, Patrick W.
APPLICANT: Gray, Patrick W.
TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRACMENTS
FILE REFERENCE: 2786(35407
CURRENT APPLICATION NUMBER: US/10/161,547
CURRENT FILING DATE: 2002-06-03
PRIOR APPLICATION NUMBER: US/09/267,574
PRIOR FILING DATE: 1999-03-12
PRIOR FILING DATE: EARLIER APPLICATION NUMBER: 09/039,198
PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 15
LENGTH: 373
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15, Application US/10161547
Publication No. US20030143216A1
GENERAL INFORMATION:
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; ORGANISM: Homo sapiens
US-10-161-547-15
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US-10-161-547-15
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Query Match
23.5%; Score 708.5; DB 14; Length 476;
Best Local Similarity 35.9%; Pred. No. 1.2e-43;
Matches 149; Conservative 75; Mismatches 154; Indels 37; Gaps 10;
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                                                                                                                                                                                                                                          FEATURE:

OTHER INFORMATION: Description of Artificial Sequence: human AMCase

CTHER INFORMATION: amino acid sequence deduced from cDNA sequence
US-10-004-219B-1
                CURRENT APPLICATION NUMBER: US/10/004,219B CURRENT FILING DATE: 2001-11-02 NUMBER OF SEQ ID NOS: 14 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 1 LENGTH: 476
                                                                                                                                                                                         TYPE: PRT
ORGANISM: Artificial Sequence
REFERENCE: 2183-5136US
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Search completed: March 22, 2004, 07:45:53 Job time : 110.643 secs

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GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 22, 2004, 06:30:23; Search time 162.975 Seconds (without alignments) 929.256 Million cell updates/sec Run on:

US-09-662-293-21

Title: Perfect score:

1 SIKRDHNDYSKNPMRIVCYV.....IMPCPPGTIWCQEKLTCIGE 536 Sequence:

Scoring table:

Searched:

BLOSUM62 Gapop 10.0 , Gapext 0.5

Total number of hits satisfying chosen parameters:

1586107 seqs, 282547505 residues

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A Geneseq 29Jan04:* Database :

geneseqp2001s:*
geneseqp2002s:*
geneseqp2003as:*
geneseqp2003bs:* geneseqp1980s:* geneseqp1990s:* geneseqp2000s:* 8 7 6 5 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2004s:*

SUMMARIES		Description	AAY52525 House dus	Aau96329	3 Aav52523		Der	AAY52535 D. pteron	Der	3 Aay52533		Der	Abp72636	ABB58595 Drosophi	Abp72634	ABB71737 Abb71737 Drosophi	4 Aaw01824 I	3 Aab07183	Abp72619	6 Abb64366	5 Abp72625		Flea		5 Abp72635 Aedes	20,040
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ALIGNMENTS

RESULT 1

House dust mite (D. farinae) mite allergen protein (map) PDerf98-536. AAY52525 standard; protein; 536 AA. (first entry) 22-FEB-2000 AAY52525; **AAY525**

Mite allergen protein; map; high molecular weight; HWW-map; allergy; house dust mite; IgE; immunoglobulin E; allergen; mapB; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; feline; canine; veterinary; antibody; vaccine; immunisation.

Dermatophagoides farinae

WO9954349-A2.

28-OCT-1999.

99WO-US008524 16-APR-1999; 98US-00062013, 98US-0085295P. 98US-0098909P. 17-APR-1998; 02-SEP-1998; 13-MAY-1998;

(HESK-) HESKA CORP.

Weber ER Mccall CA, Hunter SW,

WPI; 2000-052700/04. N-PSDB; AAZ38579, AAZ38580.

Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.

Claim 3; Page 125-127; 154pp; English.

This sequence represents Dermatophagoides farinae mite allergen protein (map) PDerf98-536, the mature form of PDerf98-555 (AAV52523). PDerf98-536 has a molecular weight of 98 KD, comprising 536 amino acids, and is a component of the Dermatophagoides farinae high molecular weight mite allergen protein (HWM-map) composition. The HWM-map composition was allergen protein (HWM-map) composition. The HWM-map composition was fixaction being analysed for the presence of proteins that bound to IgE present in mite-allergic dog antisera. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic

mite allergenic protein isolated from Dermatophagoides, designated HMW-map protein, useful as a vaccine for treating mite allergy.

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Mccall CA, Hunter SW, 2002-351888/38.

N-PSDB; ABK69575

HESKA CORP

(HESK-)

14-SEP-2001; 2001WO-US028730. 14-SEP-2000; 2000US-00662293

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compositions to modify an animal's hypersensitivity reaction to mite allergens. Animals that may be treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or domestic animals. The proteins or fragments may also be used to diagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vaccines to passively immunise animals against dust mite hypersensitivity, as positive controls in test kits and as tools to recover desired dust mite allergens from a mixture of proteins
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prican house dust mite; antiallergic; mite; IgE; protein; immunoglobulin E; hypersensitivity; AAU96329 standard; protein; HMW-map; American house Der HMW-map polypeptide #16 (first entry) Dermatophagoides farinae. immunocomplex formation. allergenic WO200222807-A2 15-JUL-2002 AAU96329 mite Der 1

21-MAR-2002

The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response companient ber HWW-map protein. The protein or a reagent comprising a non-protein capper is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A callergic response to a mite. A callergic response to a mite. A callergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map antibodies in animal fluids, and inhibition of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a classe. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96342 represent Der HWW-map polypeptides of the invention ö 120 180 180 240 240 300 360 360 420 420 480 9 9 SIKRDHNDYSKNPMRIVCYVGIMSVYHKVDPYIIEDIDPFKCTHLMYGFAKIDEYKYTIQ PGKDKI DRAYDI KELNKI FDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN YTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 141 YIWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI ELCOLFOKEEWHIQYDEYYNAPYGYNDKIWGYDDLASISCKLAFLKELGVSGVMVWSLE NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTFTTFTTFTTPTTFSPT 536 SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ VFDPYQDDNHNSWEKRGYER FNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF 61 VFDPYODDNHNSWEKRGYERFNNLRLKNPELTIMISLGGWYEGSEKYSDMAANPIYROOF IQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS 121 IQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS PGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN 361 NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTFTTTPTTTPTTTPSPT TPTTTPSPTTTPSPTTTPSPTTTPSPTTPTPTPAPTTSTPSPSPTTTBHTSETPKYTTY 536 Gaps VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTCIGE 181 VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLICIGE ô Length 536; Indels 100.0%; Score 3014; DB 5; 100.0%; Pred. No. 3.7e-210; ive 0; Mismatches 0; Claim 12; Page 125-127; 161pp; English 0; Conservative Similarity Sequence 536 AA; Mar. Local Sim. 536; 421 481 61 121 181 181 241 301 361 421 Query Match Matches 음 쉱 셤 셤 원 원 ઠે 8 ð 요 ò 셤 ઠે 8 ਠੋ

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This sequence represents Dermatophagoides farinae mite allergen protein

(map) PDerf98-555. Poerf98-555 has a molecular weight of 98 kD,

comportains 555 amino acids, and is a component of the Dermatophagoides

composition. The RNW-map composition was isolated from a D. farinae

homogenate by gel filtration, with each fraction being analysed for the

presence of proteins that bound to IgB present in mite-allergic dog

corrected proteins that bound to IgB present in mite-allergic dog

antisera. Mite allergenic proteins and peptides, and nucleic acids

encoding them, may be used in therapeutic compositions to modify an

antisera. Mypersensitivity reaction to mite allergens. Animals that may be

created include mammals and birds, especially felines, canines,

humans, other petes, and work or domestic animals. The proteins or

fragments may also be used to diagnose allergies via a skin test. The

proteins and peptides can also be used to raise antibodies, which have a

variety of potential uses. For example, they can be used as vaccines to

possively immunise animals againet dust mite hypersensitivity, as

possively immunise animals againet dust mite brover desired dust mite
                                                                                                                                                         Mite allergen protein; map; high molecular weight; HWW-map; allergy; house dust mite; IgE; immunoglobulin E; allergen; mapA; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; feline; canine; veterinary; antibody; vaccine; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
                                                                                                                         House dust mite (D. farinae) mite allergen protein (map) PDerf98-555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-052700/04.
N-PSDB; AAZ38575, AAZ38576, AAZ38579, AAZ38578.
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/note= "Mature PDerf98-555"

    19 /note= "Signal peptide"

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                                                                                                                                                                                                                                                                                           Location/Qualifiers
                  A
               AAY52523 standard; protein; 555
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98US-0085295P.
98US-0098909P.
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                                                                                        (first entry)
                                                                                                                                                                                                                                                       Dermatophagoides farinae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hunter SW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP.
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13-MAY-1998;
02-SEP-1998;
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                                                    AAY52523;
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AAY52523
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Der HMW-map protein, useful as a vaccine for treating mite allergy.
                                                  80 VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTWISLGGWYEGSEKYSDMAANPTYRQOF
                                                                                                                140 IQSVIDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVS
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                             VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Der HMW-map, American house dust mite; antiallergic; mite; IgE; mite allergenic protein; immunoglobulin E; hypersensitivity; immunocomplex formation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 12; Page 114-116; 161pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Der HMW-map polypeptide #14.
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N-PSDB; ABK69571.
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Query Match
100.0%; Score 3014; DB 3; Length 555;
Best Local Similarity 100.0%; Pred. No. 3.9e-210;
Matches 536; Conservative 0; Mismatches 0; Indels 0

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The invention relates to an isolated mite allergenic protein of

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Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a nonproteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for deensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibition of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences AAU96314-AAU96342 represent Der HWW-map polypeptides of the invention
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Pred. No. 3.9e-210;
Mismatches 0;
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                                                                                                                                                                                                                                                                                                                            Sequence 555 AA;
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Best Local S
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The invention relates to an isolated mite allergenic protein of
Dermatophagoides, designated Der HWW-map protein, and its related nucleic
acid. The Der HWW-map protein is useful for eliciting an immune response
against Der HWW-map protein. The protein or a reagent comprising a nonproteinaceous epitope is useful for identifying an animal (e.g., dog,
cat) susceptible to or having an allergic response to a mite. A
cherapeutic composition is useful for desensitising a host animal to an
allergic response to a mite. The DNA and protein can be used in the
detection of anti-Der HWW-map antibodies in animal fluids, and inhibition
of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a
disease. Antibodies that bind to Der HWW-map are useful for inhibiting
chinding of proteins to IgE, to prevent immunocomplex formation, thus
reducing hypersensitivity responses to mite allergens, and as vaccines
considered the constant of the constant o

n Dermatophagoides, designated for treating mite allergy.

New mite allergenic protein isolated from Der HMW-map protein, useful as a vaccine f Claim 12; Page 120-122; 161pp; English.

Weber

Hunter SW,

Mccall CA,

(HESK-) HESKA CORP

WPI; 2002-351888/38

N-PSDB; ABK69573

14-SEP-2001; 2001WO-US028730 14-SEP-2000; 2000US-00662293

WO200222807-A2 21-MAR-2002 ö

Gaps

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Length 555; Indels

represent Der HMM-map polypeptides of the invention

Sequence 555 AA;

9 79 120

180

240 259 300 319 360 379 480

mite allergenic Der HMW-map;

15-JUL-2002

AAU96328;

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380 NDDFKGHCGPKNPLLINKVHNMINGDEKNSFECILGPSTTTPTFTTFTTFTTPTTPSTTPSTT
                                                                                        1 SIKRDHNDYSKNPWRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ
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Score 3014; DB 5;
Pred. No. 3.9e-210;
0; Mismatches 0;
100.0%;
100.0%;
                     Local Similarity 100.
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Length 490;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein (map) Poerp98 490, the mature form of poerp99-509. Poerp98 490
has a molecular weight of 98 kD, comprising 490 amino acids, and has a
high degree of homology with the D. farinae mature 98 kD allergen, mapp
(AAY52525). Nucleic acid molecules encoding Poerp98 490 were isolated
from a D. pteronyssius cDNA library by hybridisation with a probe
encoding the D. farinae high molecular weight map (HMW-map) composition.
Mite allergenic proteins and peptides, and nucleic acids encoding them,
may be used in therapeutic compositions to modify an animal's
hypersensitivity reaction to mite allergens. Animals that may be treated
include mammals and bixds, especially felines, canines, equines, humans,
other pets, and work or domestic animals. The proteins or fragments may
peptides can also be used to caima entibodies, which have a variety of
potential uses. For example, they can be used as vaccines to passively
in munise animals against dust mite hypersensitivity, as positive controls
in test kits and as tools to recover desired dust mite allergens from a
mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
440 TPTTTPSPTTPTTTPSPTTPTTPSPTTPTPTPTPTPAPTTSTPSPFSPTTEHTSETPKYTTY 499
                                                                                                                                                                                                                                      Wite allergen protein; map; high molecular weight; HWW-map; allergy; house dust miter; IgE; immunoglobulin E; allergen; mapB; hypersensitivity reaction; therapy; treatment; diagnosis; human; fellne; canine; veterinary; antibody; vaccine; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel high molecular weight Dermatophagoides nucleic acid polypeptides used to modify an animals' hypersensitivy to mite allergens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence represents Dermatophagoides pteronyssius mite allergen
                                       VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGMWYHIMPCPPGTIMCQEKLTCIGE
                        VDGHLIKCYKEGDIPHPTUIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTCIGE
                                                                                                                                                                                                               D. pteronyssius 98 kD mite allergen protein (map) PDerp98-490.
                                                                                                                                                                                                                                                                                                                                                115. .117
/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
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                                                                                                                  AAY52535 standard; protein; 490 AA.
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98US-0085295P.
98US-0098909P.
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                                                                                                                                                                       (revised)
(first entry)
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02-SEP-1998;
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22-FEB-2000
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                                                                                                                                                                                                                                                                                                                                            123 SVLDPIQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLTLVRELKGAFEPFGYLLTAAVSPG 182
                                                                                                                                                                                                                                                                                                                                                                                                                                              183 KDKIDVAYELKELNQLFDMMVMTYDYHGGWENVFGHNAPLYKRPDETDELHTYFNVNYT 242
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                                                                                                                                                                                                                                                        63 DPFQDDNHNSWEKHGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFVQ 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     243 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPAKGMSPPGFITGEEGVLSYIEL 302
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                                                                                                                                      3 KRDHNNYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                                                                                                                                                                                                                                                                                                               SVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG
                                                                                                                                                                                                        DPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQ
                                                                                                                                                                                                                                                                                                                                                                                                                    KDKI DRAYDI KELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYT
                                                                                                       3 KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       483 GHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE
                                                  52;
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mite allergenic protein; immunoglobulin E; hypersensitivity;
immunocomplex formation.
                                                    Indels
; Score 2475; DB 3;
; Pred. No. 4.2e-171;
21; Mismatches 21;
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Query Match
Best Local Similarity 82.5%;
Matches 443; Conservative 21
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Mite allergen protein, map, high molecular weight, HMW-map, allergy, house dust mite, IgE, immunoglobulin E, allergen, mapB, hypersensitivity reaction; therapy, treatment, diagnosis, human, feline,

canine; veterinary; antibody; vaccine; immunisation

Location/Qualifiers

Peptide

Key

Dermatophagoides pteronyssinus.

/note= "Mature PDerp98-509" note= "Signal peptide"

20. .509

Protein

WO9954349-A2

28-OCT-1999

D. pteronyssius 98 kD mite allergen protein (map) PDerp98-509

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Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a non-proteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map protein acinity associated with a finannoglobulin (Ig)E or Der HWW-map protein activity associated with a fiscase. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersensitivity. Sequences ANU96314-AAU96342
  mite allergenic protein isolated from Dermatophagoides, designated HMW-map protein, useful as a vaccine for treating mite allergy.
                                                                                                                                              an isolated mite allergenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   represent Der HMW-map polypeptides of the invention
                                                                                      Claim 12; Page 144-146; 161pp; English.
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Sequence 490 AA;

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DPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQ 122
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                                                       KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                             Gaps
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  Length 490;
                             21; Indels
82.1%; Score 2475; DB 5;
82.5%; Pred. No. 4.2e-171;
ive 21; Mismatches 21;
                             Matches 443; Conservative
Query Match
Best Local Similarity
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igh molecular weight Dermatophagoides nucleic acid polypeptides modify an animals' hypersensitivy to mite allergens.

N-PSDB; AAZ38585, AAZ38586, AAZ38587, AAZ38588

Novel high

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Weber ER

Accall CA, Hunter SW, WPI; 2000-052700/04

(HESK-) HESKA

13-MAY-1998; 17-APR-1998;

98US-00062013. 98US-0085295P.

99WO-US008524

16-APR-1999;

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This sequence represents Dermatophagoides pteronyssius mite allergen protein (map) PDerp98-509. PDerp98-509 has a molecular weight of 98 kD, comprising 509 anino acids, and has a high degree of homology with the D farinae 98 kD allergen, mapB (AAX5253). Nucleic acid molecules encoding Pberp98-509 were isolated from a D. pteronyssius cDNA library by hypridisation with a probe encoding the D. farinae high molecular weight map (HWW-map) composition. Mite allergenic proteins and peptides, and nucleic acids encoding them, may be used in therapeutic compositions to moleic acids encoding them, may be used in therapeutic compositions that may be treated include mammals and birds, especially felines, canines, equines, humans, other pets, and work or domestic animals. The proteins are fragments may also be used to chagnose allergies via a skin test. The proteins and peptides can also be used to raise antibodies, which have a variety of potential uses. For example, they can be used as vacines to passively immunise animals against dust mite the recover desired dust mite allergens from a mixture of proteins. (Updated on 06-AUG-2003 to correct OS field.)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG
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Claim 3; Page 134-136; 154pp; English.
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AAY52533 standard; protein; 509 AA

(revised)
(first entry)

06-AUG-2003 22-FEB-2000

AAY52533;

RESULT 8
AAY52533
ID AAY:
XX
AC AAY:
XX
DT 06-P

us-09-662-293-21.rag

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The invention relates to an isolated mite allergenic protein of Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response against Der HWW-map protein. The protein or a reagent comprising a non-proteinaceous epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the allergic response to a mite. The DNA and protein can be used in the detection of anti-Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting
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                                                                                                                         COLFOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND
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enic protein; immunoglobulin E; hypersensitivity;
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N-PSDB; ABK69581.
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binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens, and as vaccines against mite allergen hypersenaitivity. Sequences AAU96314-AAU96342 represent Der HWW-map polypeptides of the invention
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llarity 82.5%; Pred. No. 4.4e-171;
Conservative 21; Mismatches 21;
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(first entry)

11-JUN-2003

ABP72636;

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Dermatophagoides, designated Der HWW-map protein, and its related nucleic acid. The Der HWW-map protein is useful for eliciting an immune response of against Der HWW-map protein. The protein or a reagent comprising a non-proteinaceus epitope is useful for identifying an animal (e.g., dog, cat) susceptible to or having an allergic response to a mite. A therapeutic composition is useful for desensitising a host animal to an allergic response to a mite. The DNA and protein can be used in the cleterion of anti-Der HWW-map antibodies in animal fluids, and inhibition of immunoglobulin (Ig)E or Der HWW-map protein activity associated with a disease. Antibodies that bind to Der HWW-map are useful for inhibiting binding of proteins to IgE, to prevent immunocomplex formation, thus reducing hypersensitivity responses to mite allergens formation, thus against mite allergen hypersensitivity. Sequences AAU96314-AAU96342
                                                                                                                                       mite allergenic protein isolated from Dermatophagoides, designated
                                                                                                                                                            HMW-map protein, useful as a vaccine for treating mite allergy
                                                                                                                                                                                                                                                    invention relates to an isolated mite allergenic protein of
                                                                                                                                                                                                       Claim 12; Page 139-141; 161pp; English.
                       Weber ER;
                       SW,
                                                                    WPI, 2002-351888/38
                       Hunter
                                                                                            N-PSDB; ABK69583
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                       Mccall
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Sequence 509 AA;

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                                                                    3 KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
                                   Gaps
                                   52;
 Length 509;
                                 21; Indels
82.1%; Score 2475; DB 5;
82.5%; Pred. No. 4.4e-171;
ive 21; Mismatches 21;
                                 Matches 443; Conservative
                 Similarity
                                                                                                                                     63
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The present sequence is that of the mosquito Anopheles gambiae chitinase. This protein is used in claimed fusion proteins of the invention. Such fusion proteins comprise a translocating moiety and a toxic moiety, where the translocating moiety and a toxic moiety, where acting as a carrier to translocate the toxic moiety across the gut wall of a plant pathogen, and the toxic moiety is an insect-derived peptide or protein capable of causing deleterious effects on growth, development, reproduction or mortality in pest insects. Suitable insect peptides and proteins include allatostatins, chitinase, diuretic hormone and their metabolites and analogues. Polymolecides encoding the fusion protein, vectors, host cells and transgenic plants that are resistant to disease are also provided. The fusion protein is target-specific, and resists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65 YQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSV 124
                                                                                                                 pesticide; insect control; insect; toxin; chitinase; enzyme; transgenic plant; crop protection; mosquito.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fusion protein useful for combating insect pests, comprises a translocating moiety comprising a plant protein capable of acting as a carrier to translocate toxic moiety inside plant pathogen, and a toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23 HXAASAEGKKVVCYVGTWAVYRPGNGRYDIEHIDPSLCTHLMYGFFGINE-DATVRIIDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 HNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDP
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                                                                                                                                                                                                                                                                                                                                                                                          /note= "serine/threonine/proline-rich domain'
                                                                                                                                                                                                                                                                                                                                      /note= "possible trypsin activation site"
150. 157
401. .466
                                                                                                                                                                                                                                                                                                      'note= "possible trypsin activation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86; Mismatches 178; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33.4%; Score 1007; DB 6; 39.5%; Pred. No. 1.5e-64;
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(ENVI-) DEPT ENVIRONMENT FOOD & RURAL AFFAIRS.
                                                                                                                                                                                                                    . .19
|abel= Signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Edwards JP
                                                                                                                                                                                                                                                                     label= Mature_protein
                                                                                                                                                                                                   Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in the insect gut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-AUG-2001; 2001GB-00019274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-AUG-2002; 2002WO-GB003598
                                                                                Anopheles gambiae chitinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gatehouse JA, Fitches EC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 210; Conservative
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                                                                                                                                                                    Anopheles gambiae
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                                                                                                                                                                                                                                                                                                                        Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                                           WO2003014150-A2
                                                                                                                                  neuropeptide;
                                                                                                                   Insecticide;
                                                                                                                                                                                                                                                                                                                                                       Active-site
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Best Local 8
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ABP72636 standard; protein; 525 AA

RESULT 11 ABP72636 ID ABP72

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YLDLEEN-WGRGHIKRFVGLKNVGPGLKTLAAIGGWNEGSRKFSAMAASGELRKRFISDC 140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of
                                   LDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKD
                                                   SAGVSYDIPRISKSFHFINVMVYDMHGAMDSYCGINAPLYRGSADITDRLGQINVNASIH
                                                                                                                              YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ
                                                                                                                                               FWLAQGCTGRKLVLGIPLYGRNFTLASAANIQIGAPTVGGGTVGRYTREPGVMGYNEFCE
                                                                                                                                                                                              321 KLATBAWDLRWSBEQQVPYAVRNNQWVGYDDLRSVQLKVKYLLDQGLGGAMVWSLETDDF
                                                                                                                                                                                                                                           LGVCGGGRYPLMHEIRSLVNGGT-----PSTTIMPPSVAPTT----STVAPGTTT
                                                                                  185 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH
                                                                                                                                                                                                                           KGHC-GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTTTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           detection reagent for detecting 1000 or more for elucidating cell signaling and cell-cell
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                                                                                                                                                                                                                                                                            526
                                                                                                                                                                                                                                                                                                                                                   507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                         HLIKCY--KEGDIPHPTNIHKYLVC-----EFVNGGWWVHIMPCPPGTIW
                                                                                                                                                                                                                                                                                                                                        ---PCAGGRYGFVBHPINCARYXICLTADTYYEFT-----CPPGTLF
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11-JUL-2000; 2000US-00614150
                                                                                                                                                                                                                                                                                                                                                                                                              protein;
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genes from Drosophila and
interactions.
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N-PSDB; ABL02698.
                                                                                                                                                                                                                                                                                                                                                                                                            standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       enzyme;
insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABBS7737-ABR32072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                         ----IEQGGYAKFTGLKTYNKQLKTMIAIGGWNEASSRFSPLVASNERRQQFIKNILKF
                                                                                                                                                                                                                                                                          LQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG------YLLTAAVS
                                                                                                                                                                                                                                                                                                                       SYIBLOQLFQKE-EWH-IQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVM
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                                                                                                                                                          15 RIVCYVGTWSVYH----KVDPYTIEDIDPFKCTHLMY----GFAKIDEYKYTIQVFDPYQD
                                                                                                                                                                                                         DNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDF
                                                                                                                                                                                                                                                                                                        PGKDKIDRAYDIKELNKLPDWMVWTYDYHGGWENFYGHNAPLYKRPDETDELHTY---F
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                                                                                                             Length 4498;
                                                                                                                                   Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pesticide; insect control; insect; toxin; transgenic plant; crop protection; prawn
                                                                                                         Query Match 28.2%; Score 848.5; DB 4; Best Local Similarity 34.9%; Pred. No. 7.3e-52; Matches 197; Conservative 81; Mismatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      523
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                                                                                    Sequence 4498 AA;
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Active-site
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The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidaring cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16175) and the encoded proteins (ABBS7737-ABR27272). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    isolated nucleic acid detection reagent for detecting 1000 or more
se from Drosophila and for elucidating cell signaling and cell-cell
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                                                                                                                                                                                                                                                                                                                                                        developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure, SEQ ID NO 42003; 21pp + Sequence Listing; English
                                                                TTLGLNPDPLDCTHYYLCSLNTSGGFDEKEEVCPEGTLFNPQSFYC
                                        489 YKEGDIPHPINIHKYLVCEF-VNGGWWVHIMPCPPGTIWCQEKLTC
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35.2%; Pred. No. 3.4e-52;
iive 84; Mismatches 199;
                                                                                                                                                                                                                                                                                                                 ID NO
----PPLPTTRDPSEPTTTRAPPP-
                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster polypeptide SEQ
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                                                                                                                                                                                      ABB71737 standard; protein;
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Best Local Similarity 35.2
Matches 201; Conservative
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N-PSDB; ABL15840
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interactions.
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234 RPGQIALGIPLYGRCWTLASQQETGYYAPAHQPGAAGDWTKSPGMLGYNEICYMQTTQDW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193 KELNKLFDWMVWTYDYHGGWENFYGHNAPLYKRP-DETDELHTYFNVNYTWHYYLMNGA
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                                                                                                                                                                                                                                                                                                                   Fusion protein useful for combating insect pests, comprises a translocating moiety comprising a plant protein capable of acting as carrier to translocate toxic moiety inside plant pathogen, and a toxi
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34.8%; Pred. No. 2.5e-52;
ive 85; Mismatches 173;
                                                                                                                                                                                           FOOD & RURAL AFFAIRS.
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                                                                                                                                                                                                                                    Edwards JP;
                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 7; Fig 14; 51pp; English
                                                                                      06-AUG-2002; 2002WO-GB003598
                                                                                                                          08-AUG-2001; 2001GB-00019274
                                                                                                                                                                                                                                    Fitches EC,
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183; Conserva
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KIDRAYDIKELNKLFDWMWMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH 244
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/note= "proposed active site"
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/label= Sig_peptide
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/label= Mat_protein
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          An epidermal and gut chitinase (AAW01824) of Manduca sexta is encoded by cDNA clone 201 (AAT62557), isolated from a day-6 fifth instar whole larva cDNA library. The cDNA can be inserted into a vector for host expression of the chitinase protein, and may be utilised to control a population of insect pests. A recombinant baculovirus vector is provided for this purpose, as well as a transgenic tobacco plant that shows increased resistance to tobacco hornworm. Recombinant chitinase may also be expressed in host cells or larvae for subsequent purification and use as a biocide. The insect chitinase is expected to be more potent as an insect control agent than chitinases from other sources
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Perfect score:

Run on:

Sequence:

Scoring table:

Searched:

Database

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Weber E.R., Hunter S., Stedman K., McCall C.;

"Cloning and Characterization of a 98 kDa Allergen from
"Cloning and Characterization of a 98 kDa Allergen from
Dermatophagoides farinae.";
Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.

R Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.

R GO, GO:0005576; C:extracellular; IEA.

R GO; GO:0005661; F:chitin binding; IEA.

R GO; GO:0006976; P:chitin metabolism; IEA.

R GO; GO:0006979; P:chitin metabolism; IEA.

R GO; GO:0006979; P:chitin metabolism; IEA.

R InterPro; IPR00123; Glyco.hydro_18.

R InterPro; IPR00123; Glyco.hydro_18.

R From, PP00044; ChtBD2; 1.

R SMART; SM00494; ChtBD2; 1.

R RPSTIFS; PS001095; CHTINASE_18; 1.

R PROSTIF; PS001095; CHTINASE_18; 1.
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Araneomorphae, Entelegynae, Araneoidea, Araneidae, Araneus
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SMART; SM00636; Glyco_18; 1.
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Glycosidae; Hydrolase.
SSEQUENCE 525 AA; 57211 MW; 3234360EEFF36165 CRC64;
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Local Similarity 39.5%; Pred. No. 5.2e-55;
nes 210; Conservative 86; Mismatches 178:
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01-MAR-2003 (TrEMBLrel. 23,
01-MAR-2003 (TrEMBLrel. 23,
01-0CT-2003 (TrEMBLrel. 25,
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                                                                                                                                                                                                                                                                                                    YTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 300
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                                         SIKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQ 79
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R GO; GO:0005576; C:extracellular; IEA.

R GO; GO:0008061; P:chitin binding; IEA.

GO; GO:0008061; P:chitin binding; IEA.

R GO; GO:0005975; P:carbohydrate metabolism; IEA.

R GO; GO:0006030; P:chitin metabolism; IEA.

R GO; GO:0006030; P:chitin metabolism; IEA.

R InterPro; IPR001257; Chitin bind PerA.

R InterPro; IPR001257; Glyco hydro 18.

R InterPro; IPR0101279; Glyco hydro 18.

R Pfam; PF01067; Glyco hydro 18.

R Pfam; PF01067; Glyco hydro 18.

R Pfam; PF01074; Glyco hydro 18; 1.

R ProDom; P0000471; Glyco hydro 18; 1.

R PRODM; P000471; Glyco hydro 18; 1.
                                                                                         VFDPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQF
                                                                                                                                                            IQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHGYLLTAAVS
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Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Anopheles.
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"Characterization of a novel gut-specific chitinase gene from human malaria vector Anopheles gambiae.";
J. Biol. Chem. 272.28895-28900 (1997).
EMBL; AF006575; AAB87764.1;
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MEDLINE=98030563; PubMed=9360958;
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01-JUN-1998 (TrEMBLrel.
01-JUN-1998 (TrEMBLrel.
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Chitinase. AGCHI-1.

044079

RESULT 044079

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(TrEMBLrel. 13, I
(TrEMBLrel. 25, I
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                                                                                                                                                                                       Matches 196; Conservative
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  SMART; SM00494; ChtBD2;
                                  Hydrolase, Glycosid
Multigene family.
CARBOHYD 192
CARBOHYD 463
                                                                                                                                                                           Similarity
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                                                                                                                                                                             SAGKWTIDTAYDIPGVAKYLDFINWMAYDLHGSWEKTAGHNAPLYERPGE-PESDKILNV
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                                                                  SIKRDHNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTI
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G0; G0:0005576; C:extracellular; IEA.

G0; G0:0005576; C:extracellular; IEA.

G0; G0:0008843; F:endochitinse activity, IEA.

G0; G0:0016798; F:hydrolase activity, acting on glycosyl bonds; IEA.

G0; G0:0005975; P:carbohydrate metabolism; IEA.

G0; G0:0006012; P:chitin catabolism; IEA.

InterPro; IPR001257; Chitin bind PerA.

InterPro; IPR001257; Glyco hydro 18.

InterPro; IPR001579; Glyco hydro 18.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aedes aegypti (Yellowfever mosquito).
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Aedes.
NCBI_TaxID=7159;
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-!- CATALYTIC ACTIVITY: HYDROLYSIS OF THE 1,4-BETA-LINKAGES ACETYL-D-GLUCOSAMINE POLYMERS OF CHITIN.
-!- SIMILARITY: BELONGS TO CHITINASE CLASS II (FAMILY 18 OF HYDROLASES).
EMBL, AF026492; AAB81850.1; -.
                         Length 431
                     31.1%; Score 938; DB 5; Length 43 44.0%; Pred. No. 8.4e-51; ative 76; Mismatches 132; Indels
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MEDLINE=98324849; PubMed=9662472;
de la Vega H., Specht C.A., Liu Y., Robbins P.W.;
"Chitinases are a multi-gene family in Aedes, Anopheles Drosophila.";
 47238 MW; 929439397B9BC923 CRC64;
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01-JNN-1998 (TrEMBLrel. 05, Last seq
01-OCT-2003 (TrEMBLrel. 25, Last ann
Probable chitinase 2 (EC 3.2.1.14).
                                              Conservative
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 431 AA;
                                  Similarity
                     Query Match
Best Local Simi
Matches 182;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKR
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GGCONC...) (POTENTIAL).
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GGCONC...) (POTENTIAL).
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Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                    Length 1635;
                                                                                                                                                                                                                                                                                  ; Score 869; DB 5; Length 163:
; Pred. No. 8.5e-46;
95; Mismatches 196; Indels
SMART; SM0656; Glyco 18; 3.
PROSITE; PS01095; CHITINASE 18; 3.
Hydrolase; Glycosidase; Chitin degradation; Glycoprotein;
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Q8MP05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |: || :| || :| || |- |----|
----IEQGGYAKFTGLKTYNKQLKTMIAIGGWNEASSRFSPLVASNERRQQFIKNILKF 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDF 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIVCYVGTWSVYH----KVDPYTIEDIDPFKCTHLMY---GFAKIDEYKYTIQVFDPYQD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 28.2%; Score 848.5; DB 5; Length 4498; Best Local Similarity 34.9%; Pred. No. 5.4e-44; Matches 197; Conservative 81; Mismatches 180; Indels 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4498 AA; 493096 MW; AEE65CE0AAB25489 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AE003499; AAF45544.1; -... FlyBase; FBgn030171; CG2989. GO:0005576; C:extracellular; IEA. GO; GO:000861; F:chitin binding; IEA. GO; GO:0015798; F:hydrolase activity, acting on GO; GO:0005975; P:carbohydrate metabolism; IEA. GO; GO:0006030; P:chitin metabolism; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002557; Chitin bind PerA.
InterPro; IPR001223; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01607; CBM 14; 1.
Pfam; PF00704; GlyCo_bydro_18; 1.
ProDom; PD000471; GlyCo_bydro_18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SM00494; Chebb; 1. SMART; SM00636; Glyco 18; 1. PROSITE; PS01095; CHITINASE 18; 1.
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                        FROM N.A.
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Royer V., Fraichard S., Bouhin H.;

"A Novel putative insect Chitinase with multiple catalytic domains:
"A Novel putative insect Chitinase with multiple catalytic domains:
"The hormonal regulation during metamorphosis.";

Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases.

BRD; GO:0005576; C:extracellular; IEA.

RO; GO:0005676; C:extracellular; IEA.

RO; GO:0006843; F:endochitinase activity, acting on glycosyl bonds; IEA.

RO; GO:0006576; P:endochitinase activity, acting on glycosyl bonds; IEA.

RO; GO:000579; P:maino acid metabolism; IEA.

RO; GO:000579; P:maino acid metabolism; IEA.

RO; GO:000579; P:mino acid metabolism; IEA.

RO; GO:000579; P:mino acid metabolism; IEA.

RO; GO:000630; P:chitin bind PerA.

InterPro; IPR001223; Glyco hydro 18.

R InterPro; IPR001579; Glyco hydro 18.

R Pfam; PR01607; CBM 14; 5.

R Pfam; PR01607; CBM 14; 5.

R Pfam; PR01607; CBM 14; 5.

R PrDom; PR001041; Glyco hydro 18; 5.

R RARPH: SM00441: Chrpn? - chydro 18; 5.
                                                                  161 LRONHFDGIDLDWEYPAHREGGKSRDRDNYAQFVOELRAEFEREAEKTGRTRLLLTMAVP 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             399 FWAIDNDDFRGTCNGKPYPLIEAA-----KEAMVEALGLGINEVAKPSGPOKFSRSR 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     451 SRDNASNRNRLNGKTEAPLSSRRPSATRRPAVSSTQAPP--PSTTFKLTEAEGSSLYIGG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----GSDFKCEEEGFFQHPRDCKK 542
LOEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVS 180
                                                                                                                                                                                          221 AGIEYIDKGYDVPKLNKYLDWFNVLTYDFHSSHEPSVNHHAPLYSL--EEDSEYNYDAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444 -PSPTTPTPTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHK
                                                                                                                                               181 PGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTY---F
                                                                                                                                                                                                                                                                                               238 NVNYTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYIELCOLFOKE-EWH-IQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKELGVSGVM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           356 VWSLENDDFKGHC-GPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTP
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Neoptera, Endopterygota, Coleoptera, Polyphaga, Cucujiformia,
Tenebrionidae, Tenebrio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415 T-----TPSPTT---PTTTPSPTTPTTPSPTTPTTT-----
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Last annotation update)
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E_SER_THR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        543 YYWC-LDSGPSGLGIVAHMFTCPSG 566
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2002 (TrEMBLrel. 22, Created) 01-OCT-2002 (TrEMBLrel. 22, Last seq OL-OCT-2003 (TrEMBLrel. 25, Last ann Chitinase precursor (EC 3.2.1.14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
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SWART; SW00636; Glyco 18; 5.
PROSITE; PS01095; CHITINASE 18
PROSITE; PS00165; DEHYDRAIASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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--KCAYDRFTALKQQNANLKALLAVGGWNEGSPKYSKYARADPALRNRFITSSIELLKKHG 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    176 PEISKSLDLINVMSYDLHGAMDDYTHHQSGLYAHPLDEGDNL--YLNVDFALSYWIEKGA 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312 HIQYDEYYNAPYGY---NDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          294 TVVDDDPAMHEPYAYYFPMINIWCSYDHAASVVTKAEYAKSKGLAGTMVWSVETDDFRGLC 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16 IVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQD--DNHNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    73 WEKRGYERFINILALKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           252 TRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKEEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193 KELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRP-DETDELHTYFNVNYTMHYYLNNGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369 GPKNPLLNKVHAMINGDEKNSFECILGPSTTTFTTFTTFTTFTTFTFFTFFTTFTTFSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        429 TIPITIPSPITPTTPSPITPTPTPTPAPTTSTPSPITTEHISETPKYTTYVDGHLIKC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85;
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Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.

[1]
HSSP; P07254; 1CTN.

GO; GO:000861; F:chitin binding; IEA.

GO; GO:000861; F:chitin binding; IEA.

GO; GO:000861; F:chitin binding; IEA.

GO; GO:0008075; F:chitin metabolism; IEA.

GO; GO:0006307; P:chitin metabolism; IEA.

GO; GO:0006307; P:chitin metabolism; IEA.

InterPro; IPR001223; Glyco hydro 18.

InterPro; IPR001223; Glyco hydro 18.

InterPro; IRR01579; Glyco hydro 18.

PFam; PP07044; Glyco hydro 18; 1.

ProDom; PD000471; Glyco hydro 18; 1.

ProDom; PD000471; Glyco hydro 18; 1.

SMART; SM00636; Glyco hydro 18; 1.

SMART; SM00636; Glyco hydro 18; 1.

PROSITE; PS001955; CHITINASE 18; 1.

SEQUENCE 467 AA; 51765 NW; 499P7095774CA445 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85; Mismatches 173;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27.8%; Score 837.5; DB 5 34.8%; Pred. No. 1.8e-44;
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01-MAY-2000 (TrEMBLrel. 13,
01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 183; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2328 KPTPKPSTPPYEPQKPSTQKPSYGTTESPEPVMPPDSVPCRGRLFVADEKNCNQYYLCNQ
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                                                                                                                                                                  Gaps
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EMBL; AB008027; BAA22854.1; -.
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Bukaryota, Metazoa, Arthropoda, Crustacea, Malacostraca,
Bumalacostraca, Eucarida, Decapoda, Dendrobranchiata, Penaeoidea,
                                                                                                        Query Match
27.9%; Score 842; DB 5; Length 2838;
Best Local Similarity 32.2%; Pred. No. 8e-44;
Matches 198; Conservative 92; Mismatches 205; Indels 120;
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     1 20 POTENTIAL.
21 2838 CHITINASE.
2838 AA; 321407 MM; 608B3F2A8E98B9B7 CRC64;
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01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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                                                         RA Adams M.D., Celliker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Celliker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Celliker S.E., Holt R.A., Babburner M., Henderson S.N., Button G.G., Worthard J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Change M., Miklos G.L.G., RA Barlanca R.C., Baxer E.G., Helt G., Nalson C.R., Miklos G.L.G., RA Abril J.F., Agbayani A., An H.-J., Addrews-Frankoch C., Baldwin D., Ra Ballew R.M., Basu A., Baxendal J., Bayraktaroglu L., Beasley E.M., Ballew R.M., Basu A., Baren B.P., Bhandari D., Bolshakov S., Ballew R.M., Bauch B.P., Blanderi D., Bolshakov S., Ballew R.M., Bauch B.B., Blander S., Center A., Chadre J. Buttis R.C., Busam D.A., Buller H., Cadieu E., Center A., Chadre J., Buttler L., Dengels E., Center A., Chadre J., Buttler L., Dengels E., Dunn P., Ra Dodson K., Doug L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., Ra Dodson K., Doug L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., Ra Gong F., Gorrell J.H., Gu Z., Genbart W.M., Glasser K., A Hostin D., Houston K.A., Helman T.J., Hermandez J.R., Harris M.L., Harryey D., Helman T.J., Hermandez J.R., Harris M., Harris M.L., Levitsky R.A., Li J., Li Z., Liang Y., Lin Z., Liang Y., Lin Z., Liang Y., Lin Z., Liang Y., Lin Z., Merkillov G., Milshina R.V., Mobarry C., Morris J., Moshrefi A., Mount S.M., Moy M., Murphy B., Murphy D., Walser D., Suth T., Ranger D. R., Rainston K., Buller R., Pander R., Pander R., Pander R., Pander R., Pander R., Sander K., Sander K., Sander K., Sander E., Shen H., Shen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E., Schen E.
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A Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R., Ganzalez M., Chavez C., Dorsett V., Farfan D., Frise E., George R., A Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R., A Gonzalez M., Chavis E., Handa A., Mungall C.J., RA Nunco J., Pacaleb J., Parages V., Park S., Mungall C.J., R. Nunco J., Pacaleb J., Parages V., Park S., Phouanenavong S., Wan K., Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.

B. BMBL, AE003701; AAF54897.1; -
DR RBL, AX061553; AAL29101.1; -
DR GO, GO:0005576; C:extracellular; IEA.

BRL, AX0615576; C:extracellular; IEA.

GO, GO:0005676; P:chitin binding; IEA.

GO, GO:0005975; P:carbohydrate metabolism; IEA.

DR GO, GO:0005975; P:chitin metabolism; IEA.

BR InterPro; IPR001223; Glyco-Invideolism; IEA.

DR HOREY PRO01223; Glyco-Invideolism; IEA.

DR HOREY PRO01223; Glyco-Invideolism; IEA.

DR Fam; PF00167; CBM 14; 1.

DR ProDom; PR000411; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideolism; DR Probom; PR000412; Glyco-Invideoli
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SMART; SM00636; Glyco 18; 1.
PROSITE; PS01095; CHITINASE 18; 1.
                       STRAIN=Berkeley;
MEDLINE=20196006; PubMed=10731132;
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22;

Gaps

87;

84; Mismatches 199; 27.8%; Score 837.5; DB 5 35.2%; Pred. No. 2.4e-44;

Conservative

Matches 201; Query Match Best Local S

Similarity

DB 5; Length 595; Indels

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358
                                                                                   NHNSWEKRGYERFINNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFL 128
                                                                                                                                 137
                                                                                                                                                                           QEYKFDGLDLDWEYPGS--RLGNPKIDKONYLALVRELKDAF--EPHGYLLTAAVSPGKD 184
                                                                                                                                                                                                                    138 KOYNFDGFDLDWEYPGATDRGGNYG-DKDKFLYFVEELRRAFDREGRGWEITMAVPVAKF 196
                                                                                                                                                                                                                                                                     244
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89
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDD
                                                                                                                               ----VDQGGFSKFTQLKKSNPNVKLEIAVGGWAEGGSKYSQMVAVRDRRQSFIRSVVRFM
                                                                                                                                                                                                                                                                185 KIDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELC-QLFQKEE-WHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376 IDMDDFHGMCGRKNGLTQILYDNMKN------YRVPEPTRQTTFRPEWAKPPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTTP----SPTTPTTT-----TPSPTTPS--PTTPTTPS--SPTTPTTP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      484 TITITITIPAP---EKSTEEPEEVVYPVDPVEPIDPEQPMGPQFDPNEIDCINRDFVPHP
                         "Cloning and characterization of a cDNA encoding a chitinase from heptopancreas of the Penaeus vanameii (Crustacea, Decapoda).";

Bubmitted (OCT-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF315689; AANY4647.1;

GO; GO:0000576; C:extracellular; IEA.

GO; GO:0000576; C:extracellular; IEA.

GO; GO:00016787; F:hydrolae activity; IEA.

GO; GO:0016787; F:hydrolae activity; IEA.

R GO; GO:0005975; P:carbohydrate metabolism; IEA.

R GO; GO:0005975; P:carbohydrate metabolism; IEA.

R InterPro; IPR001223; Glyco_hydro_18.

InterPro; IPR001223; Glyco_hydro_18.

R Pfam; PF01607; CBM 14; 1.
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Eukaryota, Metazoa, Arthropoda, Crustacea, Malacostraca;
Eumalacostraca, Eucarida, Decapoda, Dendrobranchiata, Penaeoidea,
Penaeidae, Litopenaeus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-WAR-2003 (TrEMBLrel. 23, Created)
01-WAR-2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          455 TPAPTISTPSPTITEHISETPKYTTY-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               498 TNIHKYLVCEFVNGGWWVHIMP----CPPGT 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541 -NCRKYFRC-----VHGKPVEFECKEGT 562
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ProDom; PD000471; Glyco hydro 18; 1.
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SMART; SM00494; ChtBD2; 1.
SMART; SM00636; Glyco 18; 1.
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SEQUENCE 460 AA; 510
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                                                                                                                                                                                                                                                                                                                                                                                                                    117 FDGLDMDWEYPTQRGGSPD-DYDNFVILMAELNQALHAEGMLLTAAVSAGKATIDPAYNV 175
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                                                                                                                                                                                                 16 IVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQD--DNHNS
                                                                                                                                                                                                                       WEKRGYERFINILRLKNPELTTMISLGGWYEGSEKYSDWAANPTYROOFIOSVLDFLOEYK
                                                                                                                                                                                                                                                                                                                 --KCAYDRFTALKQQNANLKAILAVGGWNEGSPKYSKMAADPVLRNRFITSSIELLKKHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              KELNKL FDWMVWTYDYHGGWENFYGHNAPLYKRP-DETDELHTYFNVNYTMHYYLNNGA
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                                                                                                                                                        85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).

Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Booptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
                                                                                                             Length 467;
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SMART; SM00494; ChtBD2; 1.
SMART; SM00636; Glycol8; 1.
PROSITE; PS01095; CHITURSE 18; 1.
SEQUENCE. 467 AA; 51958 MW; 734A830C6F47F4CD CRC64;
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Last annotation update)
                                                                                                         ; Score 831.5; DB 5;
; Pred. No. 4.2e-44;
87; Mismatches 174;
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MEDLINE=20196006; PubMed=10731132;
                                                                                                           27.6%;
34.2%;
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01-WAY_2000 (TrEMBLrel. 13,
01-OCT-2003 (TrEMBLrel. 25,
CG9357 protein.
                                                                                                     Query Match 27.6%
Best Local Similarity 34.2%
Matches 180; Conservative
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RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.W., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA de Pablos B., Delcier A., Deng Z., Mays A.D., Dew I., Dietz S.W.,
RA de Pablos B., Delcier A., Deng Z., Mays A.D., Dew I., Dietz S.W.,
RA Dodson K., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dotbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Goldek A., Gong F., Garrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Havyer D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Havyery D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Marvey D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Hostin D., Roudron K.A., Howland T.J., Mel M.-H., Ibeqwam C.,
Alasko P., Lei Y., Levitsky A.A., Li J., Liang Y., Lin Z.,
Antali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
Rahmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
Antal X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Markulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzry D.M., Nelson D.L.,
RA Reinert K., Pettharon K.A., Nixon K., Nusskern D.R., Pacle J. Y.,
Ranger B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
Spier B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Williams S.M., Woodage T., Horley K.C., Mu D., Yang S., Yao Q.A.,
Williams S.M., Myers E.W., Rubin G.M., Venter J.C.;
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
Rangia R.A., Myers E.W., Rubin G.M., Venter J.C.;
Rangia R. Mang Z.-1954, 1CTN.
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RESEL 128 QEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDR 188 SYDIPAMVPYLDLINVMAYDLHGPWDQVVGINAPLYAAEKDASDSSGRQQQLNVDAVVKY 246 246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 305 68 67 EENS-GRGNIKSFNALKLKNPVLKTLVAVGGWNEGSKRFSLVARDPSKREKFVDDVVRFL 10 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHIMYGFAKIDBYKYTIQVFDPYQDD 69 NHNSWEKRGYERFNNIRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL 189 AYDIKELNKLFDWMNYMTYDYHGGWENFYGHNAPLY---KRPDETDELHTYFNVNYTMHY Gaps on glycosyl bonds; IEA. : 16 Length 460; Indels 460 AA; 51055 MW; 8EF4F126F1DD8D9B CRC64; GO: GO: 0005576; C: extracellular; IEA.
GO: GO: 0005576; C: extracellular; IEA.
GO: GO: 000561; P: chitin binding; IEA.
GO: GO: 0005975; P: carbohydrate metabolism; IEA.
GO: GO: 0006975; P: p: protein folding; IEA.
GO: GO: 0006457; P: p: protein folding; IEA.
InterPro: IPR001257; Chitin bind PerA.
InterPro: IPR001257; Chitin bind PerA.
InterPro: IPR001279; Glyco hydro 18.
InterPro: IPR001579; Glyco hydro 18.
Ffam; PF01607; CEM 14; 1.
Pfam; PF01607; CEM 14; 1.
Pfam; PF01607; CEM 14; 1.
Pfam; PF01607; CAM 14; 1.
Pfam; PF01607; CAM 14; 1.
ProDom; PD000471; Glyco hydro 18; 1. 27.6%; Score 830.5; DB 5; 33.7%; Pred. No. 4.7e-44; iive 87; Mismatches 168; PROSITE; PS01095; CHITINASE 18; 1.
PROSITE; PS00453; FKBP_PPIAŠE 1; 1.

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  141 DGLDLDWEYPGAADRGGSFSDKDEFLYFVQELKRAFIRADRGWELTAAVPLANFRLMEGY 200
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R GO; GO:0008651; F:chitch binding; IEA.

GO; GO:0008643; F:chitch binding; IEA.

GO; GO:0016798; F:chitch binding; IEA.

GO; GO:0016491; F:chitch binding; IEA.

R GO; GO:0016491; F:chitch binding; IEA.

R GO; GO:0016491; F:xy cacheductase activity, acting on glycosyl bonds; IEA.

R GO; GO:0016491; F:xy conceductase activity; IEA.

R GO; GO:0016596; F:hydrolase activity; IEA.

R GO; GO:0016991; F:xy cacheductase activity; IEA.

R GO; GO:0016991; F:xy cacheductase activity; IEA.

R GO; GO:0016991; F:xy cacheductase activity; IEA.

R InterPro; IPR001257; Chitin Metabolism; IEA.

R InterPro; IPR001257; Chitin Mind PerA.

R InterPro; IPR001257; Glyco_hydro_18.

R Pfam; PF01607; CEM 14; 1.

R Pfam; PF01007; CEM 14; 1.

R ProDom; PP00041; Glyco_hydro_18; 1.

R ProDom; PP000441; Glyco_hydro_18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Amphibia; Barrachia, Anura, Neobatrachia, Bufonoidea; Bufonidae; Bufo. NCBI_TaxID=8387;
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373 AIDMDDFKGLCGEENPLIKLIH-----KHMSTYTVPPARTGHATPTPEW--ARPPSTP
                                                            191 DIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTWHYYLNNG
                                                                                            201 HVPELCQELDAIHVMSYDLRGNWAGFADVHSPLYKRPHD-QWAYEKLNVNDGLNLWEEKG
                                                                                                                                                                          251 ATRDKLVMGVPFYGRAWSIED-----RSKLKLGDDPAKGMSPPGFISGEEGVLSY
                                                                                                                                                                                                                              -----WAY
                                                                                                                                                                                                                                                                                        300 IELCQLFQKE--EWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVW
                                                                                                                                                                                                                                                                                                                                         313 YEICTEVDADGSGWTXXMDEFGKCPYAYKGTOWVGYEDPRSVEIXMNWIKEKGYLGAMTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Thesis (2001), Department of Department of Biology, Waseda University,
                                                                                                                                                                                                                                                                                                                                                                                                   SLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTT---TPTPTTTPTTTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           424 SDPSEGDPI----PTTTTTTVKPTTTRTTARPT--TTTTKVPHGTTEEDFDINVRPEVEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478 PPTENEVDNADV-CNSEDDYVPDKKECSKYWRC--VNGEGVQ--FSCQPGTIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 488;
                                                                                                                                                                                                          260 CPTINICLVVGIPFYGRSFTLSAGNNNYGLGTYINKEAGGGDDAPYTNATGF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 27.3%; Score 823; DB 13; Length 4 Best Local Similarity 34.7%; Pred. No. 1.5e-43; Matches 186; Conservative 88; Mismatches 174; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOAD PANCREATIC CHITINASE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Foad pancreatic chitinase (EC 3.2.1.14).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tokyo, Japan.
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Q90W34
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306 FQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
                                                                                                                                                                                                    GHCGPK-NPLLNKVHNMINGDEKNSFECILGPSTITPTTFTTFTTFTTFTTFTT 424
                                                                                                                                                                                                                                                                                                                     425 TPSPTTPTTTPSPTTPTTPSPTTPTPTPTPTPAPAPTTSTPSPTTTEHTSETPK--YTTYVD 482
                                                                                                                                                                                                                                                                                                                                                                            411
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIVCYFSNWAVYRPGVGRYGIEDIPVDLCTHLIYSFIGVTEKSSEVLIIDPELD----V 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
NCBI_TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                            388 ----NTPSGLTTESNRESPSEGFSCPAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   412 A-----PAGYIRDPDNCSKFYYC----SGGKTHNFDCPSGLNFDLDTKSC 452
                                                                                                                                                                                                                                                                                                                                                                                                                                483 GHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC 533
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                544 AA; 61069 MW; 89872DFC1DA23753 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                           367 GTCGQQPYPLLHEINRVLFGG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2001 (TrEMBLrel. 16, 01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 199; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bombyx mori (Silk moth)
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80 ----EKNGFRNFTSLRANHPDIKEMVAVGGWAEGGSKYSHWVAQLSSRWAFVKSVVDFL 134
                                                                                                                                                                                                                                                                                       129 QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAF--EPHGYLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                               195 LMEGYHVPDLCRELDAIHVNSYDLRGNWAGFADVHSPLYKRPHD-QWAYEKLNVNDGLNL 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309 --WAYYEICTEVDKKDSGWTKKWDEAGKCPYAYKGTQWVGYEDERSVEIKMNIKEKGYL 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     414 EWARPPSTSANPSEGAPIPTTIAKPKPAVPKPVPTVKPSKPTTTNA--APTTTKAPEAEV 471
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Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
                                                                                                                                                        20 SEGRARIUCYFSNWAVYRPGVGRYGVEDIPVEMCTHIIYSFIGVTENTHEVLVIDDELDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   367 GAMTWAVDMDDFRGLCGDTNPLMKLLHKHMS------SYTVPPPRTGNTTPTP
                                                                                                                                  10 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDD
                                                                                                                                                                                                            69 NHNSWEKRGYERPNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL
                                                                                                                                                                                                                                                                                                                                                                    186 IDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                246 YLNNGATRDKLVMGVPFYGRAWSIED-----RSKLKLGDPAKGMSPPGFISGEE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTPTT-
                                                                                               Gaps
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                                                         5; Length 557;
                                                     Query Match
27.3%; Score 821.5; DB 5; Length
Best Local Similarity 34.7%; Pred. No. 2.2e-43;
Matches 193; Conservative 79; Mismatches 207; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein., Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases. EMBL, ABO52914; BAB20017.1; GO; GO:0005576; C:extracellular; IEA. GO; GO:0008061; F:chitin binding; IEA.
PROSITE; PS01095; CHITINASE 18; 1.
SEQUENCE 557 AA; 62227 MW; 2CF7827D6A294AD5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bombycidae; Bombyx
NCBI TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      353
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                                                                                           74 - EKRGYERFINILALKNPELITMISLGGWYEGSEKYSDMAANPTYROOFIQSVLDFLQEYK 132
                   73
                                                         68
                                       NDDVLYKQFNDLKQKNKNLVTLLAIGGWNFGTQKFTDMVASSGNRSIFIKSVIAYLRQNN
                                                                                                                                                                      FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK
                                                                                                                                                                                            POKBEW----HIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEN
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                                                                                                                                                                                                                                                 186 IDRAYDIKELNKLPDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----CVEKTDGLHVNPLNTNKFYIC--ANGR--TYSMKCADGLVF-QASCNC 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480 YVDGHLIKCYKEGDIPH--PINIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A Zheng Y., Zheng S., Cheng X., Ladd T., Krell P.J., Arif B., Zheng Y., Zheng S., Cheng X., Ladd T., Krell P.J., Arif B., Retinakaran A., Feng O.;

A Reinakaran A., Feng O.;

A molt-associated chitinase cDNA from the spruce budworm, Choristoneura fumiferana.",

Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.

E MBL; AYO9731; AAM43792.1;

G GO:0005576; Cextracellular; IEA.

G GO:0005576; Cextracellular; IEA.

G GO:000577; F:Chitin binding; IEA.

G GO:000577; F:Chitin metabolism; IEA.

R G GO:000577; P:Carbohydrate metabolism; IEA.

R G GO:000630; P:Chitin metabolism; IEA.

R InterPro; IPR001223; Glyco_hydro_18.

InterPro; IPR001225; Glyco_hydro_18.

R Ffam; PF01607; CBM 14; 1.

R Ffam; PF01607; GBM 14; 1.

R PFDDOW; PD000471; Glyco_hydro_18; 1.

R SMRXT; SM00494; Glyco_hydro_18; 1.

S MART; SM00494; Glyco_18; 1.
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01-OCT-2002 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
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OBMTK0
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352

413 450 510

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Bombyx mori:

on glycosyl bonds; IEA

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Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Bombycoidea;
Bombycidae; Bombyx.
NCBI_TaxID=7091;
                                                                                                                                      SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDINE-21124800; Pubmed-11222960;

Abdel-Banat B.M.A., Koga D.;

"A genomic clone for a chitinase gene from the silkworm, Bomb structural organization identifies functional motifs.";

I mictural organization identifies functional motifs.";

E MED. AB048355; BAB13481.1;

C GO; GO:0005576; C:extracellular; IEA.

GO; GO:000843; F:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; F:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl bonc GO; GO:0005975; P:endcointinase activity, acting on glycosyl chit in metabolism; IEA.

R DiterPro; IPR001257; Chitin bind_PerA.

InterPro; IPR001257; Chitin bind_PerA.

InterPro; IPR001579; Glyco_hydro_18.

R Probon; PP000471; Glyco_hydro_18; 1.

R Probon; PP000471; Glyco_hydro_18; 1.

R PRODON; PD000471; Glyco_hydro_18; 1.
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SMART; SM00636; Glyco 18; 1.
PROSITE; PS01095; CHITINASE 18; 1.
Glycosidase; Hydrolase; Signal.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               309 --WAYYEICTEVDADGSGWIYKWDEFGKCPYAYKGIQWVGYEDFRSVEIRAWWIKEKGYL 366
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69 NHNSWEKRGYERFINNLRLKOPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAF--EPHGYLLTAAVSPGKDK 185
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                                        on glycosyl bonds;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 27.2%; Score 819; DB 5; Length 54 Best Local Similarity 36.6%; Pred. No. 3e-43; Matches 200; Conservative 72; Mismatches 203; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              543 AA; 60971 MW; C36C71E3B84DF8F8 CRC64;
     GO, GO:0008843; F:endochitinase activity, IEA.
GO; GO:0005975; P:hydrolase activity, acting on gl
GO; GO:0005975; P:carbohydrate metabolism; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
InterPro; IPR002557; Chitin bind PerA.
InterPro; IPR00123; Glyco_hydro_18.
InterPro; IPR001573; Glyco_hydro_18.
InterPro; IPR001573; Glyco_hydro_18.
Fam; PF01607; CBM 14; 1.
Probom; PF00004; Glyco_hydro_18; 1.
Probom; PF00004; Glyco_hydro_18; 1.
PROSITE; PR01095; CHITINASE_18; 1.
PROSITE; PS01095; CHITINASE_18; 1.
Glycogidase; Hydrolase; Signal.
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CHITINASE.
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POTENTIAL.

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                                                                                                                                                                                                                                      129 QEYKEDGLDLDWEYPGSR-LGNPKIDKONYLALVRELKDAF--EPHGYLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                          89
                                                                                                                                        78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   246 YLNNGATRDKLVMGVPPYGRAWSIED-----RSKLKLGDPAKGMSPPGFISGEE
                                                                                                                                                                                                                                                                                                                                                                                                                                     295 GVLSYIELCQLFQKE--EWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E----HISETPKYTTYVDGHLIKCYKEGD-IPHPTNIHKYLVCEFVNGGWWVHIMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EDFDINVRPEVEELPT-ENEVDNADV-CNSEDDYVPDKKECSKYWRC--VNGEGVQ--FS
                                                                                                                                                                                                                                                                                                                       10 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDD
                                                                                                                              20 SDSRARIVCYFSNWAVYRPGVGRYGIEDIPVDLCTHLIYSFIGVTEKSSEVLIIDPELD-
                                                                                                                                                                         69 NHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL
                                                                                                                                                                                                                                                                                                     186 IDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                          Gaps
                                                                          72;
                                              Length 543;
                                           27.2%; Score 819; DB 5; Length 54 36.6%; Pred. No. 3e-43; Live 72; Mismatches 203; Indels
             60982 MW; DE29675D83AEC2EF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHITINASE
                                                                             Matches 200; Conservative
             543 AA;
                                         Query Match
Best Local Similarity
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01-WAR-2001 (TrEMBLrel. 16, Created)
01-WAR-2001 (TrEMBLrel. 16, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Chitinase precursor (EC 3.2.1.14)

(Silk moth)

CHI. Bombyx mori (

543 AA

PRELIMINARY;

Q9GV05,

RESULT 15 029GV05 DD 029GV0 DT 01-MA DT 01-MA DT 01-0C DE Chiti GN CHI.

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g

520 CPPGTIW 526 | ||||: 518 CQPGTIF 524

Search completed: March 22, 2004, 06:59:27 Job time: 108.855 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

March 22, 2004, 06:31:13; Search time 20.5581 Seconds (without alignments) 1357.597 Million cell updates/sec Run on:

US-09-662-293-21 3014 1 SIKRDHNDYSKNPMRIVCYV......IMPCPPGTIWCQEKLICIGE 536 Title: Perfect score:

Scoring table: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5

141681 segs, 52070155 residues Searched:

Total number of hits satisfying chosen parameters:

141681

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	P36362 manduca sex	Q13231 homo sapien	mus n	dros		caen	s sns	ovis	BUM	-	Q60557 mesocricetu		рошо	рошо			mus m	P29030 brugia mala					P48827 trichoderma					P36909 streptomyce	-		96156	275 therm	Q02817 homo sapien
SUMMERTES	QI	CHIT MANSE	CHT1_HUMAN	CHIA MOUSE	CHI1_DROME	CHIA_HUMAN	CHIT_CAEEL	OGP FIG	OGP_SHEEP	C3L1_MOUSE	OGP_MOUSE	OGP_MESAU	OGP_BOVIN	OGP_HUMAN	C3L1 HUMAN	OGP_PAPAN	C3L2_HUMAN	CHT1_MOUSE	CHIT_BRUMA	CHI3_DROME	CHI1_BACCI	CHI1_APHAL	CHIA_SERMA	CHI4_TRIHA	CHIA_ALTSO	CHIT_NPVOP	CHIT_NPVAC	CHIB_SERMA	CHIT_STRLI	CHI1_COCPO		CHID_VIBFU		MUC2_HUMAN
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xenopus lae corgyia pseu xenopus lae caldocellum cae mays (m dictyostelli saccharomyc dictyostelli kluyveromyc sorghum bic drosophila
062635 005049 005049 010641 P22533 00689 P47179 P02698 P09808
MUCZ_RAT MUCI_XENLA Y091_NDVOP MUAI_XENLA MANE_CALSA RATN_MAIZE GP10_DICDI DAN4_YEAST GUN6_DICDI KTXA_KUULA EXTN_SORBI
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1513 662 279 200 1331 267 544 1161 705 283
88777777768 91197885711199
244 238 230 227 221 221 217.5 217.5 215.5 208.5
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ALIGNMENTS

Euteleostomi;

SUBCELLULAR

FUNCTION, AND

(ISOFORMS 1 AND 2),

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MEDLINE=9913818); PubMed=7836450;
Renkema G.H., Boot R.G., Muijsers A.O., Donker-Koopman W.E.,
Aerts J.M.F.G.;
"Purification and characterization of human chitotriosidase, a novel
member of the chitinase family of proteins.";
J. Biol. Chem. 270:2198-2202(1995).
                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 22-42 AND 178-198, FUNCTION, AND TISSUE SPECIFICITY
                                                                                                                                                                                                                                    "Cloning of a cDNA encoding chitotriosidase, a human chitinase produced by macrophages.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=98421482; PubMed=9748235;
Boot R.G., Renkema G.H., Verhoek M., Strijland A., Bliek J., de Moulemeester T.M.A.M.O., Mannens M.M.A.M., Aerts J.M.F.G. Menlemester T.M.A.M.O., Mannens M.M.A.M., Aerts J.M.F.G. "The human chitotriosidase gene. Nature of inherited enzyme
                                                                                                                                                                  TISSUE=Macrophage;
MEDLINE=96064695; PubMed=7592832;
Boot R.G., Renkema G.H., Strijland A., van Zonneveld A.J.,
Aerte J.M.F.G.;
                   Homo sapiens (Human).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLYMORPHISM, AND DESCRIPTION OF ISOFORM 3.
                                                                                                                                                                                                                                                                                             Biol. Chem. 270:26252-26256(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biol. Chem. 273:25680-25685(1998)
                                                                                                                        SEQUENCE FROM N.A.
                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            deficiency
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    193
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194 IMEGYHVPELCQELDAIHVMSYDLRGNWAGFADVHSPLYKRPHD-QWAYEKINVNDGLHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134 KKYDFDGLDLDWEYPGAADRGGSFSDKDKFLYLVQELRRAFIRVGKGWELTAAVPLANFR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAF--BPHGYLLTAAVSPGKDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             186 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YLNNGATRDKLVMGVPFYGRAWSIED-------RSKLKLGDPAKGMSPPGFISGEE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTFT-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                   PFam; PF00704; Glyco hydro_18; 1.
ProDom; PD000471; Glyco_hydro_18; 1.
SMART; SM06494; ChtBD2; 1.
SMART; SM00636; Glyco_18; 1.
PROSITE; PSS0940; CHIT_INASE_18; 1.
PROSITE; PS01095; CHITINASE_18; 1.
Hydrolase; Glycosidase; Chitin degradation; Chitin-binding; Signal;
                                                                                                                                                                                                                                  SER/THR-RICH.
CHITHN-BINDING TYPE-2.
PROTON DONOR (BY SIMILARITY).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                     3989D756C96CD490 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                               27.7%; Score 834; DB 1;
35.9%; Pred. No. 1.3e-38;
tive 76; Mismatches 202;
                                                                                                                                                                                                                ENDOCHITINASE.
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      PF01607; CBM 14; 1.
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Best Local Similarity
Matches 203; Conserv
                                                                                                                                                                         Gîycoprotein.
SIGNAL
CHAIN
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                                                                                                                                                                                                                                                                                                                            CARBOHYD
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      Pfam;
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but
                                                                  MEDITARE AND ALCOHOLDS.

MEDITARE 22095530; PubMed-1960986;

Fusetti F., von Moeller H., Houston D., Rozeboom H.J., Dijkstra B.W.,
Boot R.G., Aerts J.M.F.G., van Aalten D.M.F.;
Structure of human chitotriosidase. Implications for specific
inhibitor design and function of mammalian chitinase-like lectins.";
J. Blol. Chem. 277-25537-25544(2002)
J. Blol. Chem. 277-25537-25544(2002)
J. FUNCTION: Degrades chitin and chitotriose. May participate in the
defense against nematodes and other pathogens. Isoform 3 has no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOLYMORPHISM: A 24 bp duplication in exon 10 leads to the activation of an alternative splice site and the production of an inactive protein. About 6% of the population are deficient for CHIT1 activity, while 35% are carriers and show reduced enzyme levels. People with CHIT1 deficiency appear perfectly healthy. MISCELLANEOUS: Patients with type I Gaucher disease (GD 1) [MIM:230800] have very high plasma levels of CHIT1, and this can be used as diagnostic aid and to evaluate the success of treatment. Successful therapy brings the CHIT1 activity levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -i- SUBCELLULAR LOCATION: Secreted. A small proportion is lysosomal.
-i- ALTERNATIVE PRODUCTS:
Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Isold=Q13231-3; Sequence=VSP_008633;
Note=Duplication of 24 bp in_exon 10 leads to the use of a
cryptic splice site. The normal splice site is still present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE SPECIFICITY: Detected in spleen. Secreted by cultured
X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 22-386 IN COMPLEX WITH
                                                                                                                                                                                                                                                                                                                                                                                                             enzymatic activity.
CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VSP 008632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=Q13231-2; Seguence=VSP_008631,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=Q13231-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acetyl-D-glucosamine polymers of -!- SUBUNIT: Monomer.
                                         CHITOBIOSE AND ALLOSAMIDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 back to normal
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Name=2
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CHT1 HUMAN STANDARD; PRT; 466 AA.
Q13231; Q9H3V8;
15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Chitotriosidase 1 precursor (RC 3.2.1.14) (Chitinase 1).

USEPPE PEPPE

HUMAN

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STRAIN=BALB/c; TISSUE=Lung;
MEDLINE=21125893; PubMed=11085997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biol. Chem. 276:6770-6778(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
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                                                                                                                                                                                             CHIA MOUSE
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          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74 -EKRGYERFINILALKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIOSVLDFLOEYK 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72 NDETLYQEFNGLKKNNPKLKTLLAIGGWNFGTQKFTDMVATANNRQTFVNSAIRFLRKYS 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
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                                                                                                                                                                                                                    MIM, 600031, -.

REAL GO, GO,0005615; Clextracellular space; TAS.

GO, GO,00045619; F:chitinase activity; TAS.

GO, GO:00045617; F:response to bacteria; TAS.

RO; GO:0009613; F:response to pest/pathogen/parasite; TAS.

RICEPTO; IPRO01255; Chitin bind PerA.

RICEPTO; IPRO01257; Glyco hydro 18.

RICEPTO; IPRO01257; Glyco hydro 18.

RICEPTO; IPRO01579; Glyco hydro 18.

REAL SMO4494; Glyco hydro 18; 1.

RODOM; PO00471; Glyco hydro 18; 1.

RART; SM04049; Ghydro 18; 1.

RART; SM04049; Ghydro 18; 1.

RART; SM0505; CHITINASE 18; 1.

RROSITE; PS0940; CHIT BIND II; 1.

ROSITE; PS0940; CHIT BIND II; 1.

ROSITE; PS0940; CHIT BIND II; 1.

ROSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

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RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.

RAPOSITE; PS0940; CHITINASE 18; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186 IDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 738; DB 1; Length 466;
Pred. No. 1.8e-33;
5; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SL -> NG (in isoform 2).
/FIId=VSP 008631.
Missing (in isoform 2).
/FIId=VSP 008632.
Missing (in isoform 3).
/FIId=VSP 008633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B4312D1E885E386D CRC64;
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CHITIN-BINDING TYPE-2.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85;
                                                                                                                     EMBL, U29615; AAC50246.1; -.
EMBL, U62662; AAG10644.1; -.
EMBL, UG17, 31-JAN-02.
PDB, 11G17, 18-SEP-02.
PDB, 11G2; 18-SEP-02.
PDB, 11G0; 29-JUU-03.
Genew; HGNC:1936; CHIT1.
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DISULFID
VARSPLIC
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SEQUENCE FROM N.A.

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SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MADDINE-21085660; PubMed=11217851;

MEDLINE-21085660; PubMed=11217851;

Arakawa T., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

Arakawa T., Gojobori Y., Kiyosawa H., Kondo S., Yamanaka I.,

Saito T., Okazaki Y., Gojobori P., Kaukawa T., Saito R.,

Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casuvant T.,

Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Boffelli D., Bojunga N., Carninci P., de Barsh G.,

Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Gustinoich S., Hill D., Hofmann M., Mame D.A., Kamiya M., Lee N.H.,

Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Hayashizaki Y.,

Hayashizaki Y.,

Hayashizaki Y.,

Hayashizaki Y.,
                                                                                                                                                             425
310 KGATKQRIQ-DQ--KVPYIFRDNQWYGFDDVESFKTKVSYLKQKGLGGAMVWALDLDDFA 366
                                                                                                                                                                                                                                                           -----FSCNQG-----RYPLIQTLRQELSLPYLPSGT 394
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MEDLINE=22388257; PubMed=12477932;
StraubSerg R.L., Feingeld B.A., Grouse L.H., Derge J.G.,
StraubSerg R.L., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshlyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunazatne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
                                                                                                                                                             Boot R.G., Blommart E.F.C., Swart E., Ghauharali-van der Vlugt K., Bijl N., Moe C., Place B.G., Aerts J.M.F.G., "Identification of a novel acidic mammalian chitinase distinct from chitotriosidase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q91XÄ9; Q99PH2; Q9DB03; Q9JLN1;
15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Acidic mammalian chitinase precursor (EC 3.2.1.14) (AMCase) (YNL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Rođentia, Sciurognathi; Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., SEQUENCE OF 22-43, TISSUE SPECIFICITY, AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               473 AA
                                                                                                                                                                                                                                                                                                                                                                    426 PSPTTPTTPSPTTPSPTTPT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   395 PELEVP-KPGQPSEPEHGPSPGQDT 418
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74 EKRGYERFINILRLKNPELITIMISLGGWYEGSEKYSDWAANPTYRQOFIOSVLDFLQEYKF 133
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Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Mhiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.W.,
Butterfield Y.S.M., Krzywinski M.I., Skalska U., Smailus D.E.,
Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,
"Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                         Price P.A., Harris S.C., Williamson M.K.;

"YNL, a putative mouse chitinase.";

Submitted (MAY-199) to the EMBL/GenBank/DDBJ databases.

Submitted (MAY-199) to the EMBL/GenBank/DDBJ databases.

In the defense against nematodes and chier pathogens.

In CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of Nacetyl-D-glucosamine polymers of chitin.

In SUBCELDIAR LOCATION: Secreted (Probable).

In SUBSECIPTITY: Highly expressed in submaxillary gland, and stomach. Expressed at lower levels in lung.

In SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Carbohydrate metabolism; Chītin degradation;
Polysaccharide degradation; Hydrolase; Glycosidase; Chitin-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACIDIC MAMMALIAN CHITINASE.
CHITIN-BINDING TYPE-2.
BY SIMILARITY.
BY SIMILARITY.
P -> A (IN REF. 1).
W, 333C874477476695 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                                                           and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24.1%; Score 727.5; DB 1; 37.0%; Pred. No. 6.7e-33; ive 69; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; ECO1134; AAH134:1; ALT INIT.
EMBL; BC034548; AAH134548:1; ALT INIT.
EMBL; AF154571; AAF31644:1; -..
EMBL; AF154571; AAF31644:1; -..
MGD; MG1:193205C; Chia.
GO; GO:0004568; F:Chitinase activity; IDA.
GO; GO:0006032; P:Chitin catabolism; IDA.
INTERPO; IPRO01525; Chitin bind PerA.
INTERPO; IPRO01523; Glyco hydro-18.
INTERPO; IPRO01539; Glyco hydro-18.
Ffam; PF01607; CBM 14; 1.
PFGM; PF000047; Glyco hydro-18; 1.
From: PF000047; Glyco hydro-18; 1.
FMART; SM00494; ChtED2; 1.
FMART; SM00636; Glyco l8; 1.
PROSITE; PS001095; CHITINAGE 18; 1.
PROSITE; PS01095; CHITINAGE 18; 1.
PROSITE; PS01095; CHITINAGE 18; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF290003; AAG60018.1; -.
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                                                                                                                                                                                           SEQUENCE OF 2-473 FROM N.A.
TISSUE=Skin;
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22
424
140
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367
307
293
473 AA;
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Best Local Simil
Matches 154; (
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified annothis statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247 INNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLF 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307 QK---EBWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDD 363
                                                                                                                                              186
                                                                                                                                                                                                                                                 191
                                                                                                                                                                                                                                                                                                                                                                                                     187 DRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DVILYKAFNDLKNRNSKIKTLLAIGGWNFGTAPFTTWVSTSQNRQTFITSVIKFLRQYGF
                                                                                                                                        DGLDLDWBYPGSRLGNPKIDKQNYLALVRELKDAFEPHG------YLLTAAVSPGKDKI
                                                                                                                                                                                                  407
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=Berkeley;
MEDLINE=22426071; PubMed=12537574;
Hoskins R.A., Smith C.D., Carlson J.W., Carvalho A.B., Halpern A.,
Kaminker J.S., Kennedy C., Mungall C.J., Sullivan B.A., Sutton G.G.,
Yasuhara J.C., Wakimoto B.T., Myers E.W., Celniker S.E., Rubin G.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acetyl-D-glucosamine polymers of chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FIGSFCDQGKFPLISTINKA-------LGISTEGCTAPDVPSEPVTTP
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10-0CT-2003 (Rel. 42, Last sequence update)
10-0CT-2003 (Rel. 42, Last sequence update)
10-0CT-2003 (Rel. 42, Last sequence update)
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in Aedes, Anopheles and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AF026500; AABB1858.1; -. FlyBase; FBgn0022703; Chtl.
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11; 73 72

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Indels

Conservative

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Similarity

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16 IVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW-

24 LICYFTNWAQYRPGLGSFKPDDINPCLCTHLIYAFAGMQNNEITT---

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Chem. 276:6770-6778(2001).
                                                  N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253 EYNFDGLDLDWEYPVCWQVDCKKGTAB-EKIGFSALVRELFYAFQPRGLILSAAVSPNKK 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      312 VIDAGYEVAELSHYFSWISVMAYDYHGQWDKKTGHVAPMYSHPEGT----ANFNANFSMN 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 304
                                                                                                                                                                                                                                                                                                                      15 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                143 KIICYFTNWAWYRQGGGKFLPEDIDSDLCTHIIYGFAVLSRDNLTIQ-----PHDSW
                                                                                                                                                                                                                                                                                                                                                                                                              ---EKRGYERFINILRLKNPELTTMISLGGWYEGS-EKYSDMAANPTYRQQFIQSVLDFLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                       195 ADLDNKFYERIVAYRKKGAKVT--VAIGGWNDSAGDKYSRLVRNPEARSRFIRNVLDFIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EYKFDGLDLDWEYP-----GSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTWH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305 LFOKEEWHIQYDEYYN-APYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDD
                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Lung, and Stomach;
MEDLINE=21125893; PubMed=11085997;
Book R.G., Blommaart B.F.C., Swart E., Ghauharali-van der Vlugt K.,
Bijl N., Moe C., Place A., Aerts J.M.F.G.;
"Identification of a novel acidic mammalian chitinase distinct from chitotriosidase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [2] SEQUENCE FROM N.A. (ISOFORM 1), FUNCTION, AND TISSUE SPECIFICITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISCUE=Lung;
MEDLINE=20018184; PubMed=10548734;
Saito A., Ozaki K., Fujiwara T., Nakamura Y., Tanigami A.;
Saito A., Ozaki K., Fujiwara T., Nakamura Y., Tanigami A.;
"Isolation and mapping of a human lung-specific gene, TSA1902, encoding a novel chitinase family member.";
Gene 239:325-331 (1999).
InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco_hydro_18AS.
Prom; PR00704; Glyco_hydro_18; 2.
ProDom; SW006471; Glyco_hydro_18; 2.
SWART; SW00636; Glyco_18; 1.
PROSITE; PS01095; CHITINASE_18; 1.
Hydrolase; Glycosidase; Chitin degradation; Multigene family.
                                                                                                                                                                                                                             Length 508;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHIA HUMAN STANDARD; PRT; 476 AA.
Q9BZPE; Q86UD8; Q9ULX3; Q9ULX4;
15-MAR-2004 (Rel. 43, Created)
15-MAR-2004 (Rel. 43, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Acidic mammalian chitinase precursor (EC 3.2.1.14) (AMCase)
(TSA1902).
                                                                                                                                                                                                                          24.0%; Score 723; DB 1; Length 50 ilarity 39.8%; Pred. No. 1.3e-32; Conservative 71; Mismatches 121; Indels
                                                                                                                                                            264 264 PROTON DONOR (BY SIMILARITY)
508 AA; 57751 MW; 26CA23B02EFDEE97 CRC64;
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                                                                                                                                                                                                                                                                           144;
                                                                                                                                                            ACT SITE
SEQUENCE
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RA MEDISWE=22388257; PubMed=12477932;
RA Klausner R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B. Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg E., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Biatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Brapleron M., Soares M.B., Bonaldo M.F., Casrainci P., Frange C.,
RA Brownstein M.J., Usdin T.B., Tochiyuki S., Carrinci P., Prange C.,
RA Bras S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Richards S., Worley K.C., Hals, Sodergren B.J., Lu X., Glubs R.A.,
Richards S., Worley K.C., Maxy D.M., Sodergren B.J., Lu X., Gibbs R.A.,
Richards S., Worley K.C., Halvon, Sodergren B.J., Lu X., Gibbs R.A.,
Richards S., Worley K.C., Shevchenko Y., Bouffard G.G.,
RA Hitching M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Tuckhman J.W., Green B.D., Dickson M.C.,
Rabiterfield Y.S.N., Krzywinski M.I., Skalaka U., Smallus D.E.,
Rochert A., Schein J.E., Jones S.J.M., Marra M.A.;
Rad Mutterfield Y.S.N., Krzywinski M.I., Skalaka W.A.;
Rad Mouse CDNA sequences.",
Rad Mouse CDNA sequences.",
Rad Mouse CDNA sequences.",
Rad Mouse CDNA sequences.",
Reconstrion and initial analysis of more than 15,000 full-length human man mouse CDNA sequences."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=2; Synonyms=TSA1902-L; Sequence=Displayed,
Name=2; Synonyms=TSA1902-L;
Isoid=09BZR56-2; Sequence=VSP_008635;
Name=3; Synonyms=TSA1902-S;
Isoid=09BZR6-3; Sequence=VSP_008634;
-: TISSUE SPECIFICITY: Highly expressed in stomach. Detected at lower levels in lung.
-: SIMILARITY: Belongs to chitinase class II (family 18 of glycosyl hydrolases).
-: SIMILARITY: Contains 1 chitin-binding type-2 domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AB025008; BAA86980.1; -- EMBL; AB025008; BAA86981.1; -- EMBL; AF025009; BAA86981.1; -- EMBL; BC047336; AAH47336.1; ALT_INIT. MIM; 60680; -- GOCONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

-!- FUNCTION: Degrades chitin and chitotriose. May participate in the defense against nematodes and other pathogens.

-!- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-acetyl-D-glucosamine polymers of chitin.

-!- SUBCELLULAR LOCATION: Secreted (Probable). Isoform 2 and isoform lack the signal sequence and are cytoplasmic.

-!- ALTERNATIVE PRODUCTS:

Event-Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GO; GO:0005737; C:cytoplasm; NAS.
GO; GO:0005737; C:cytoplasm; NAS.
GO; GO:000630; P:chitin metabolism; NAS.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001257; Chitin bind PerA.
InterPro; IPR001259; Glyco_hydro_18.
InterPro; IPR00159; Glyco_hydro_18.
Pfam; PF001607; CEM 14; 1.
Propon; PD000417; Glyco_hydro_18; 1.
Propon; PD000417; Glyco_hydro_18; 1.
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189 AYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLN 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114 GMYRRVNKLKVIDTQLKTLLSFGGMSFGTALFQGMASSASRKVFIDSAITFVRIWGFDG 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136 LDLDWEYPGGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDKIDR 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       249 NGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288 KGMPKEKIIVGMPTYGRGWTLNNASAINPGTSGSPAKITQYVQ-EAGVGAYFEFCEMLAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SNSNGQLYPLISVIAKELGG-----VIPKKGGVTTAPTTVATTVTTGRPPMTSAVTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GPKN----PLLNKVHNMINGDEKNSFECIL---GPSTTTPT-----PTTTPTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77 G-YERFINILALKUPELITMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFLQEYKFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18 CYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSWEKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                         glycosyl
Insect Mol. Biol. 7:233-239(1998).
-i- CATALYTIC ACTIVITY: Hydrolysis of the 1,4-beta-linkages of N-
                                                                                                                                                                                                                         111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 617;
                                         (family 18 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                           hydrolases).
-!- SIMILARITY: Contains 2 chitin-binding type-2 domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W -> C (IN REF. 2).

ITF -> TTS (IN REF. 2).

I -> L (IN REF. 2).

DDA1D2AAC0554DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30.2%; Pred. No. 1.4e-31;
ive 90; Mismatches 210
                           acetyl D-glucosamine polymers of chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23.4%; Score 705.5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66857 MW;
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Best Local Similarity 30.2<sup>3</sup>
Matches 178; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 617 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 305
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                                                                                                                                                                                                                                                                                                                    RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
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Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                      37;
                                                                                                                                                                                                                                                      23.5%; Score 708.5; DB 1; Length 476; 35.9%; Pred. No. 7.2e-32; tive 75; Mismatches 154; Indels 37
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 62-178 FROM N.A. MEDLINE-98324849; PubMed-9662472; de la Vega H., Specht C.A., Liu Y., Robbins P.W.; "Chitinases are a multi-gene family in Aedes, Anopheles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nhan M.;
Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                          Missing (in isoform 2).
/FIId=VSP 008635.
I -> V (IN REF. 1).
V -> G (IN REF. 1).
W, 92B27BAD2F7EB4CC CRC64;
                                     CHITINASE
                   BY SIMILARITY.
ACIDIC MAMMALIAN CHITINA
CHITIN-BINDING TYPE-2.
POLY-SER.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
MISSING (in isoform 3).
/FIId=VSP_008634.
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ID __CHIT CAEEL

ID __CHIT CAEEL

AC 01174; 001321;

DT 01-NOV-1997 (Rel. 35, Last sequence update)

DT 01-NOV-1997 (Rel. 35, Last sequence update)

DT 15-NPA-2004 (Rel. 35, Last sequence update)

DT 15-NPA-2004 (Rel. 43, Last annotation update)

DT 15-NPA-2004 (Rel. 43, Last annotation update)

DT 15-NPA-2004 (Rel. 43, Last annotation update)

CHT-1 OR C04F6.3.

OX Caenorhabditis elegans.

OX Caenorhabditis elegans.

OX Raditidae, Peloderinae, Caenorhabditis.

OX NCBI TaxID=6239;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=Bristol N2;

RA Nhan M.;

RJ SUDMICE OF 62-178 FROM N.A.

RD SEQUENCE OF 62-178 FROM N.A.

RD SEQUENCE S8324649; Pubmede9662472;

RA MEDLINE=88324649; Pubmede9662472;

RA Gla Vega H., Specht C.A., Liu Y., Robbins P.W.

RT "Chitinasses are a multi-gene family in Aedes, An RT Chotinasses are a multi-gene family in Aedes, An RT Drosophila.";
                                                                                                                                                                                                            432 V
52271 MW;
         splicing
                                                                                                                                                                                                                                                                                       Conservative
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                         21
476
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420
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151
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        Signal; Alternative SIGNAL 1
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476 AA;
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                              22
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307
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                                                                   DOMAIN
ACT SITE
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QAGFLAYYEVCSFVQRAKKRW---IDHQY-VPYAYRGKEWVGYDDDISFSYKAFFIKKEH 348
                                                                                                                                                                                                                                                                                                                       407 CPESLAVTKDLTTDLGILPLGGEAVATETHGRSDNM-TVTPGGGLVAPTRPTLSFGKLTV 465
                                          K-----DARD--ESIFYPEFNQLKERNEKLKTLLSIGGWNFGTSRFTTMLSTFTNREK 119
                                                                                                                                                                                                                                                          349 FGGAMWWILDLDDVRGTFCGTGPFPLVYMINDL--LLKABVSSTLSPGFGLSTTVNSSRT
                                                                               173 YLLTAAVSPGKDKIDRAYDIKELNKLFDWMVVMTYDYHGGWENFYGHNAPLYKRPDETDE
                                                                                                                                   233 LHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISG
                                                                                                                                                                                       293 EBGVLSYIELCOLFO--KEEWHIQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKELG
                                                                                                                                                                                                                                                                                               FIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----
                                                                                                                                                                                                                                           351 VSGVMVWSLENDDFKG-HCG----PKNPLLNKVHNMINGDEKNSFECILGPSTTTPTPTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        028542; 028543;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 39, Last annotation update)
04-NOV-1997 (Rel. 39, Last annotation update)
04-NOV-1997 (Rel. 39, Last annotation update)
04-NOV-1997 (Reliable of Covidant of Covidantial (Reliable of Covidantial) (Reliable of Covidantial) (Reliable of Covidantial)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries (Sheep).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
Bovidae, Caprinae, Ovis.
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                                                                                                                                                                                                                                                                                                                                                                               466 APEGKTESPGEKAMTPVGHPSVTP
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MEDLINE=95269691; PubMed=7750470;
                                                                                                                                                                                                                                                                                                                                                    APTISTPSP----TITTEHISETP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oviducal glycoprotein) (OEGP)
OVGP1 OR OGP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 10-539 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                development
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SHEEP
                                                        120
                                                                                                                                                                 238
                                                                                                                                                                                                                   293
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     69
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OGP_SHEEP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89
                                             ----PITIPSPITPITIPSPITIPITIPITPIPAPITSIPSPITIEHISEIPKYITYVDGH 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VLKHHNGAAH---KLVCYFANWA-FSRPGPASILPRDLDPFLCTHLVFAFASMNDSQIVA
                                                                                                                                                                                                                                                                                                                                                                  2 IKRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYGFAKIDEYKYTI
                   TITAATITITRAATITITASNINVCSGKSDGFYPNSNNCGLFVLCLSSKSYSMSCPSGLQYS
                                                             Gaps
                                                                                                                                                                                                                                                                                                   Sus scrofa (Pig).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
                                                                                                                                                                                                                  01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (POSP-B3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED (GLCNAC. .) (POTENTIAL)
N-LINKED (GLCNAC. .) (POTENTIAL)
N-LINKED (GLCNAC. .) (POTENTIAL)
                                                                                                                --KCIKDGFFGVPSDCLKFIRC--VNG--ISYNFECPNGLSFHADIWMC 607
                                                                                                 LIKCYKEGDIPHPINIHKYLVCEPVNGGWWVHIMPCPPGTIWCQEKLTC 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OVIDUCT-SPECIFIC GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 189; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31B78F49CA2363A2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .7e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18AS.
Prom, PP00049; Glyco hydro 18; 1.
SMART; SW00636; Glyco hydro 18; 1.
PR0SITE; PS01095; CHITINAEE 18; FALSE NEG.
Glycoprotein; Fertilization; Signal.
SIGNAL
                                                                                                                                                                                              527 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 694.5;
Pred. No. 4.7
                                                                                                                                                                                              PRT;
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34.9%;
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                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                        OVGP1 OR OGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176;
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CARBOHYD
CARBOHYD
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                     459
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CHI3L1 OR BRP39
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                                                                                                                                       Mus musculus
                                          C3L1 MOUSE
Q61362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                    RESULT 9
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                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSYIELCOLFOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMV 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTTTPTP----TTTPTP 410
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLDFLQEYKEDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLT 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124 VIALLETHGFDGLDLFFLYPGLR-GSPARDRWTFVFLLEBLLQAFKNEAQLTMRPRLLLS 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAVSPGKDKIDRAYDIKELNKLFDWMVMIYDYHGGWENFYGHNAPLYKRPDEIDELHIY 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PNVNYTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGV 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LAYYEVCSFVQRAKKRWINDQY--VPYAFKGKEWVGYDDAISFGYKAFFIKREHFGGAMV 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----TPSPKFWFSTAVNSS 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQS 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PLD-----EKILYPBFNKLKERNRGLKTLLSVGGWNFGTSRFTKWLSTFSNRERFVKS 123
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 HNDYSKNPMRIVCYVGTWSVYHKVDPYTI--EDIDPFKCTHLMYGFAKIDEYKYTIQVFD
                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
coincident with transport of the
 reduction on day 3 of pregnancy coincident with transport of embryo from the oviduct to the uterus, a reproductive stage associated with rising progesterone levels.
SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                            . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                               61;
                                                                                                                                                                                                                                                                                                                                                                                                      22.6%; Score 682.5; DB 1; Length 539; 34.4%; Pred, No. 2.2e-30; Live 85; Mismatches 180; Indels 61.
                                                                                                                                                                                                                                                                                    SPECIFIC GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                        M -> V (IN REF. 2).
K -> N (IN REF. 2).
A -> V (IN REF. 2).
A -> V (IN REF. 2).
A -> Y (IN REF. 2).
A -> T (IN REF. 2).
I -> T (IN REF. 2).
W, F35000269987C193 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355 WTLDLDDFRGNFCGTGPFPLAHTLANLLVNDEFSS-
                                                                                                                                                               EMBL; U1998; AAB11052.1; -.

PIR; 146470; 146470.

InterPro; 1PR001223; Glyco_hydro_18.

InterPro; 1PR001223; Glyco_hydro_18AS.

Pfam; PF00704; Glyco_hydro_18; 1.

SMART; SM00634; Glyco_hydro_18; 1.

SMART; SM00634; Glyco_hydro_18; 1.

SMART; SM00634; Glyco_hydro_18; 1.

SROSITE; PS01095; CHITINASE_18; FALSE_NGG.

Glycoprotein; Fertilization; Signal.

SIGNAL

22 539 OVIDUCT-SPECIFIC
                                                                                                                                                                                                                                                                                              N-LINKED
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                                                                                                                                                       EMBL; U16719; AAC48471.1; -.
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                                                                                                                                                                                                                                                                                      539
402
122
122
375
520
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520
539 AA;
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Best Local Simi
Matches 171;
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CONFLICT
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CONFLICT
CONFLICT
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAF----EP--HGYLLTAAVSPGKD 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               243
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71 EWNDESNYDKIAKIKTRATALKTILLSVGGWKFGEKRFSEIASNTERRTAFVRSVAPFIRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 YGFDGLDLAWLYPRLR-----DKOYFSTLIKELNAEFTKEVOPGREKLLLSAALSAGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23 KLYCYFTSWSQYREGVGSFLPDAIQPFLCTHIIYSFANIS------SDNMLSTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Morrison B.W., Leder P.; "neu and ras initiate murine mammary tumors that share genetic markers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34; Gaps
                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                    16-0CT-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Chitinase-3 like protein 1 precursor (Cartilage glycoprotein-39)
(GP-39) (BRP39 protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similarity).
subccllular LOCATION: Extracellular (By similarity).
subcllularity: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            generally absent in c-myc and int-2-initiated tumors.", Oncogene 9:3417-3426(1994).
-!- FUNCTION: May play an important role in the capacity of respond to and cope with changes in their environment (B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22.6%; Score 680; DB 1; Length 38 37.1%; Pred. No. 2e-30; tive 75; Mismatches 130; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
CHITINASE-3 LIKE PROTEIN 1.
N-LINKED (GLCNAC. . . . ) (POT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             381 AA; 43001 MW; EF6581E8184F0450 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
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InterPro; IPR001223; Glyco_hydro_184S.
Pfam; PF00704; Glyco_hydro_18; 1.
SMART; SM0636; Glyco_hydro_18; 1.
SMART; SM0636; Glyco_18; 1.
PROSITE; P$01095; CHITINASE_18; FALSE_NEG.
381
                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
STRAIN-FVB/N; TISSUE-Breast;
MEDLINE-95060797; PubMed-7970700;
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MGD; MGI:1340899; Chi3ll.
STANDARD;
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Elol. Reprod. 53:285-294(1995).

Elol. Reprod. 53:285-294(1995).

In the fertilization process and/or early embryonic development.

In the fertilization process and/or early embryonic development.

In the fertilization process and/or early embryonic development.

In the fertilization process and/or early embryonic development.

In SUMILAR LOCATION: Secretory granules.

In SIMILAR INCATION: Epithelial cells of the oviduct.

In SIMILARITY: Belongs to family 18 of glycosyl hydrolases.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      244 YMIRLGAQASKLIMGIPTFGKSFTLAS-SENQLGAPISGEGLPGRFTKEAGTLAYYBICD 302
245 YYLNNGATRDKLVMGVPFYGRAMSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 304
                                                      305 LFQKEEWHIQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Molecular cloning and characterization of a mouse oviduct-specific
                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                        01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Betrogen-dependent oviduct protein).
                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=ICR; TISSUE=Oviduct;
MEDLINE=96115001; PubMed=7492680;
Sendai Y., Komiya H., Suzuki K., Onuma T., Kikuchi M., Hoshi H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TAP.)-G-LV).

N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL);
37246C8F01665552 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22.6%; Score 680; DB 1; Length 721; 33.7%; Pred. No. 4.1e-30; ive 79; Mismatches 184; Indels
                                                                                                                                                                                                              721 AA
                                                                                                                              KGHCGPKN--PLLNKVHNMI 382
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469
721 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               306 FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 VQRAKKH-WIDYQYVPYAPKGKEWLGYDDIISFSYKAMYVKREHFGGAMVWTLDMDDVR 363
                                                                                                                                                                                                                                                                          FDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 185
23 KLVCYFTNWA-HSRPGPASIMPHDLDPPLCTHLIFAFASMSNNQI---VAKOLQDENVL- 77
                                                                                                                                                                                                                                                                                                                     414 IEVLTTDIKILPPGGEAMTTEVHRRYENMTTVPSDGSVTPGGTASPRKHAVTPENNTMA
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Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Cricetinae,
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01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (ZP-0).
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MEDLINE=96115007; PubMed=7492686;
Suzuki K., Sendai Y., Onuma T., Hoshi H., Hiroi M., Araki
"Molecular characterization of a hamster oviduct-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases
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Biol. Reprod. 53:345-354(1995).
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                                                                                                                                                    246 YLNNGATRDKIVMGVPFYGRAWSIEDRSKLKIGDPAKGMSPPGFISGEEGVLSYIELCQL 305
                                                                                                                                                                                                                                                        GTFCGNGPFPLVHILNELLYRAEFNSTPLPQFWFTLPVNSSGPGSESLPVTELTTDTVK 423
                                                                                                                                                                                                                                                                                                                                                                                                                             424 ILPPGGEAMATEVHRKYEKVTTIPNGGFVTPAGTTSPTTHAVALERNAMAPGAKTTTSLD 483
PDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 185
                        glycoprotein.",
Biol. Reprod. 50:927-934(1994).
-!- FUNCTION: Binds to cocyte zona pellucida in vivo. May play a role
in the fertilization process and/or early embryonic development.
-!- SUBCELDUAR LOCATION: Secretory granules.
-!- TISSUB SPECIFICITY: Oviduct.
-!- SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
                                                                                                                                                                                      246 WRNLGAPADKLIMGPPAYGRTFHLLRESKNGLQAASMGPASPGKYTKQAGFLAYYEVCSF
                                                                                                                                                                                                                                  FQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVNVWSLENDDFK
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Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidaa; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oviduct-specific glycoprotein precursor (Oviductal glycoprotein) (Oviductin) (Estrogen-dependent oviduct protein) (Fragment). OVGP1 OR OGP.
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MEDLINE-94257768; PubMed-8199272;
Sendai Y., Abe H., Kikuchi M., Satch T., Hoshi H.;
"Purification and molecular cloning of bovine oviduct-specific
                                                                                                                                                                                                                                                                                                                                                                                                 -TTTPSP---TTPTTTPSPTT
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01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
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InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco_hydro_18AS.
Pfam; PF00704; Glyco_hydro_18; 1.
ProDom; PD000471; Glyco_hydro_18; 1.
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                            MEDLINE=94058981; PubMed=8240241;
Malette B., Bleau G.;
Malette B., Bleau G.;
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Malette B., Bleau G.;
Malette B., Bleau G.;
Malette B., Bleau G.;
Malette B., Bleau G.;
Malette B., Bleau G.;
Malette B., Bleau G.;
Malette B., Bleau G.;
Malette Cartilization of hamster oviductin as a sulphated
market fartilization process and/or early embryonic development.
Might act as a protective secretion influencing the first steps of the reproductive process necessary for the normal triggering of the reproductive process necessary for the normal triggering of fertilization and early embryonic development.

C.:- SUBCLINIAR LOCATION: Secretory granules.

C.:- PITM: MIGHIN O-GLYCOSYLATED AND ALSO N-GLYCOSYLATED.

SIMILARITY: Belongs to family 18 of glycosyl hydrolases.
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8 X 15 AA TANDEM REPEATS.
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H -> I (IN REF. 4).
D -> G (IN REF. 2 AND 3).
R -> O (IN REF. 2 AND 3).
F -> Y (IN REF. 2 AND 3).
O -> L (IN REF. 2 AND 3).
MISSING (IN REF. 2 AND 3).
T -> I (IN REF. 2 AND 3).
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-> I (IN REF. 2 AND 3).
BB57E0E514EC1972 CRC64;
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R InterPro; IPR001223; Glyco_hydro_18.
R InterPro; IPR001529; Glyco_hydro_18AS.
R Pfam; PR00704; Glyco_hydro_18AS.
R ProDom; P0000471; Glyco_hydro_18; 1.
R MART; SM00646; Glyco_hydro_18; 1.
PROSITE; PS01095; GHYGO_18; 1.
PROSITE; PS01095; GHYGO_18; 1.
SIGNAL 1.
21
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Best Local Similarity 34.1%
Matches 175; Conservative
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                                                                                                                                                                                                                                                                                                                  PYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQS 123
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                                                                                                                                                                                                   Gaps
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Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGP_HUMAN STANDARD; PRT; 678 AA.
012899; 015841;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
00'siduct-specific glycoprotein precursor (Oviductal glycoprotein)
(Oviductin) (Estrogen-dependent oviduct protein) (Mucin 9).
00'GPI OR OGP OR MUC9.
                                                                                                                                                                                                   99
                                                                                               (POTENTIAL)
                                                                                                                                                             537;
                                                                           OVIDUCT-SPECIFIC GLYCOPROTEIN.
N-LINKED (GLCNAC. . .) (POTENT
CFDCEE6F0212D791 CRC64;
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Arias E.B., Verhage H.G., Jaffe R.C.;
"Complementary deoxyribonucleic acid cloning and molecular
characterization of an estrogen-dependent human oviductal
                                                                                                                                                         Query Match 22.3%; Score 673; DB 1; Length 53
Best Local Similarity 33.7%; Pred. No. 7.1e-30;
Matches 170; Conservative 90; Mismatches 179; Indels
PROSITE; PSO1095; CHITINASE 18; FALSE NEG.
Glycoprotein; Fertilization; Signal.
NON TER
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Biol. Reprod. 51:685-694 (1994)
[2]
                                                                                                                     59617 MW;
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537
399
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                                                                                                                     537 AA;
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TISSUE=Oviduct;
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399
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                                                                                                   CARBOHYD
                                                                                                                     SEQUENCE
                                                           SIGNAL
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                                                                                                              Coville G.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: Binds to occyte zona pellucida in vivo. May play a rol-
in the fertilization process and/or early embryonic development.
-!- SUBCELLULAR LOCATION: Secretory granules.
-!- TISSUB SPECIFICITY: Oviduct.
-!- TISSUB SPECIFICITY: Deviduct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Signal; Polymorphism.

BY SIMILARITY.
OVIDOT-SEPECIFIC GLYCOPROTEIN.
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
T-1 GLAVAR 016109.

M -> T (IN REF. 2).
S -> P (IN REF. 2).
Y -> H (IN REF. 2).
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Jaffe R.C.; Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases
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GO: 0007565; P:pregnancy; TAS.
InterPro; IPR00123; Glyco_hydro_18.
InterPro; IPR001579; Glyco_hydro_18.
Pfam; PF00704; Glyco_hydro_18; 1.
Probom; PD000401; Glyco_hydro_18; 1.
PROSITE; PS01095; CHITINASE 18; FALSE NEG.
Glycoprotein; Pertilization; Signal, Polymory SIGNAL
CHAIN
22 678
OVIDUCT-SPECFFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL: US8010; AAB04126.1; -
EMBL: US8001; AAB04126.1; JOINED.
EMBL: US8002; AAB04126.1; JOINED.
EMBL: US8003; AAB04126.1; JOINED.
EMBL: US8004; AAB04126.1; JOINED.
EMBL: US8006; AAB04126.1; JOINED.
EMBL: US8006; AAB04126.1; JOINED.
EMBL: US8006; AAB04126.1; JOINED.
EMBL: US8009; AAB04126.1; JOINED.
EMBL: US8009; AAB04126.1; JOINED.
EMBL: US8009; AAB04126.1; JOINED.
EMBL: AL390195; CAC36039.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U09550; AAA86946.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  402
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514
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                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74 EKRG---YERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFLQE 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185 KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         305 LFQKBEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302 FLRGATVHRILGQ--QVPYATKGNQWVGYDDQESVKSKVQYLKDRQLAGAMVWALDEDDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131 YKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF----EP--HGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 RIVCYVGTWSVYHKVDPYTIED-IDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0005578; C:extracellular matrix; TAS.
GO; GO:0005615; C:extracellular space; TAS.
GO; GO:0005201; F:extracellular matrix structural constituent; TAS.
InterPro; IPR001223; Glyco.hydro.l8.
InterPro; IPR001579; Glyco.hydro.l8AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.9%; Score 660; DB 1; Length 38 37.0%; Pred. No. 2.5e-29; ive 75; Mismatches 129; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHITINASE-3 LIKE PROTEIN 1.
N-LINKED (GLCNAC. .) (POI 76ADD8299EEEC2D1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23 KLVCYYTSWSQYREGDGSCFPDALDRFLCTHIIYSFANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfant, PF00704; Glyco_hydro_18; 1.
Prodom, PP0004041; Glyco_hydro_18; 1.
SMART, SMO0636; Glyco_18; 1.
PROSITE; PS01095; CHITINASE_18; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     623
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGSFCGODLRFPLTNAIKDAL 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Glycoprotein; Signal; 3D-structure.
                                                                                                                                                                               EMBL, M80927; AAA16074.1; --
EMBL, Y08374; CAA69661.1; --
EMBL, Y08375; CAA69661.1; JOINED.
EMBL, Y08377; CAA69661.1; JOINED.
EMBL, Y08377; CAA69661.1; JOINED.
EMBL, Y08378; CAA69661.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42613 MW;
                                                                                                                                                                                                                                                                                                                                                    Genew; HGNC:1932; CHI3L1.
MIM; 601525; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141; Conservative
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                                                                                                                                                                                                                                                                                                               PIR; A49562; A49562.
PDB; ILA7; 10-APR-02
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P36718;
01-JUN-1994 (
01-NOV-1997 (
15-JUL-1999 (
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OGP PAPAN
ID OGP P
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DT 01-JU
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                 AAVSPGKOKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTY 236
                                                             237
                                                                                                                                                                                        LSYIELCOLF--OKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGV 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - SSAYAMNYWRKIGAPSEKLIMGIPTYGRTFRLIKASKNGLQARAIGPASPGKYTKQEGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hakala B.B., White C., Recklies A.D.; "Human cartilage gp-39, a major secretory product of articular chondrocytes and synovial cells, is a mammalian member of a chitinase
                                                                                                                                                                                                                                  LAYFELCSFVWGAKKHW----IDYQYVPYANKGKEWVGYDNAISFSYKAWFIRREHFGGA
                                                                                                     FNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGV
                                           9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUL-1993 (Rel. 26, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Chitinase-3 like protein 1 precursor (Cartilage glycoprotein-39)
39) (39 kDa synovial protein) (YKL-40).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata; Craniata; Vertebrata; Buteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Butele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               499
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein family.";
J. Biol., Chem. 268:25803-25810(1993)
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MEDLINE=94064658; PubMed=8245017;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64 PYQDDNHNSWEKRGYERFNNLRLKNPELITIMISLGGWYEGSEKYSDMAANPTYRQQFIQS 123
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTY 236
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HDGAAH--KLVCYFTNWA-HSRPGPASILPHDLDPPLCTHLIFAFASMNNQI---VAK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mavrogianis P.A., O'Day-Bowman M.B.,
                                                                                Pario ambis (Olive baboon).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Cercopithecidae,
Oviduct-specific glycoprotein precursor (Oviductal glycoprotein) (Oviductin) (Estrogen-dependent oviduct protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21.7%; Score 654; DB 1; Length 623;
31.2%; Pred. No. 9e-29;
ive 82; Mismatches 195; Indels 118;
                                                                                                                                                                                                                                                                                                                                            Verhage H.G., Fazleabas A.T., Mavrogianis P.A., O'Day-Bowman M.I
Donnelly K.M., Arias B.B., Jaffe R.C.;
"The baboon oviduct: characteristics of an oestradiol-dependent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; MS9903; AAB39765.1; -
PIR; A37954; A37954.
InterPro; IPR001223; Glyco hydro 18.
InterPro; IPR001579; Glyco hydro 18.
Pfam; PF007047 Glyco hydro 18, 1.
Probom; PD000471; Glyco hydro 18, 1.
SMART; SM0635; Glyco 19; 1.
R PROSITE; PS01095; GHTTINASE 18; FALSE NEG.
R Glycoprotein; Fertilization; Signal.
I SIGNAL
I 21 0VIDUGT-SPECIFIC GLYCOPROTEIN.
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N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-91367180; PubMed-1716345;
Donnelly K.M., Fazleabas A.T., Verhage H.G., Mavrogianis P.A.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement ( or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY PARTIAL SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                         oviduct-specific glycoprotein.";
Hum. Reprod. Update 3:541-552(1997).
                                                                                                                                                                                                                                                                                            TISSUE=Oviduct;
MEDLINE=98244335; PubMed=9584944;
Oviduct-specific glycoprotein
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                                                                                                                                                                                                              NCBI_TaxID=9555;
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Matches 179;
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401
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                                                                                                                                                                                411
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    473 IIGATTMİSVGHQSMİPGEKALİPVGHQSELPCKKİLİPVGHQSVİİGQKİLISVGYHSV 532
                                                                                          ----TTPTTPSPTTPSPTTPSPTTTPS--PTTPTTP----SPTTPTPT----TP 454
                                                               237 FNVNYTWHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGV 296
355 MVWSLENDDFKG-HCGP-KNPLLNKVHNMINGDEKNS-----FECILGPSTTTP---
                                                                                                                                                                                                                                                                                                                               ----TPTTTTTPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     455 TPAPTIST----PSPTTIEHTSETPKYTTYVDGH 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               533 TPGEKTLTPVGHPSVTPVSHQSVSPGGMTMTPVH
                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                             402
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Search completed: March 22, 2004, 06:53:06 Job time : 21.5581 secs

us-09-662-293-21.rpr

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GenCore version 5.1.6

Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on:

March 22, 2004, 06:40:28; Search time 34.8594 Seconds

(without alignments)

1479.047 Million cell updates/sec

1479.047 Million cell updates/sec

Sequence:

Scoring table:

Scoring table:

1 SIKRDHNDYSKNPWRIVCYV.....IMPCPPGTIWCOEKLTCIGE 536

Scoring table:

Searched:

283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0

Maximum DB seq length: 2000000000
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

SUMMARIES

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	ID	T44445	T14075	A56596	A53918	T15408	I46470	S57197	ထ	A49562	S51327	861551	827879	A38221	D83764	A38368	T43916	T00323	T29275	T44440	D82510	T03884	\$60651	JQ1975	A25090	w	F84238	36	145	AB1088
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* Ouerv	Match	33.4	28.8	27.7	26.6	23.4	22.6	22.3	22.1	21.9	ä	21.4	20.2		19.5	•	18.6		14.3	•	14.2	•	•	•	13.6	13.5	13.4	13.4	13.4	13.2
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533 5424 553 755 755 755 755 755 755 755 755 755	
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ALIGNMENTS

RESULT 1 T4445 Cittinase (EC 3.2.1.14) [imported] - African malaria mosquito Cittinase (EC 3.2.1.14) [imported] - African malaria mosquito Cittinase (EC 3.2.1.14) [imported] - African malaria mosquito Cibate: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jan-2000 Cibate: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jan-2000 Cibate: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jan-2000 Cibate: 2. Jacobe_Lorena, M. Shen, Z. Jacobe_Lorena, M. Shen, Z. Jacobe_Lorena, M. AiReference number: Z22771 AiReference number: Z22771 AiReference numbar AiReference mana, AiReference: EMBLAF008575; PIDN:AAB87764.1 AiReference: adult; gut Ciganetics: AiGene: chi- C	Query Match Best Local Similarity 39.5%; Pred. No. 2.9e-55; Matches 210; Conservative 86; Mismatches 178; Indels 58; Gaps 12;	6 HNDYSKNPMRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDP 64	65 YQDDNHNSWEKRGYERFNNLRLKNPELTTWISLGGWYEGSEKYSDWAANPTYRQOFIQSV 124	125 LDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKD 184 :	185 KIDRAYDIKELAKLEDWANVMTYDYHGGWENFYGHNAPLYKREDETDELHTYFNVNYTWH 244	245 YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGYLSYIELCQ 304 ::	305 LFQKEEWHIQYDSYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMYWSLENDDF 364 321 KLATEAWDLRWSEEQQVFYAVRNNQWVGYDDLRSVQLKVKYLLDQGLGGAMVWSLETDDF 380	365 KGHC-GPRNPLLNKVHNMINGDERNSFECILGPS#TTPFFTTPTTPTTPTTPTTPTTFT 423 181 LGVCGGGRYPLMHEIRSLVNGGTPSTTTMPFSVAPTTSTVAPGTTT 426
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424 ITPSPITPITIPSPITPTTPSPITPTPTPAPITSTPSPITITHHISETPKYTTVUDG 483

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T14075
Chitinase (EC 3.2.1.14) - yellow fever mosquito
Cispecies: Aedes aegypti (yellow fever mosquito)
Cispecies: Aedes aegypti (yellow fever mosquito)
Cibate: 20.5ep-1999 #sequence_revision 20.5ep-1999 #text_change 20.5ep-1999
C;Accession: T14075
R;de la Vega, H.; Specht, C.A.; Liu, Y.; Robbins, P.W.
Insect Mol. Biol. 7, 233-239, 1997
A;Title: Chitinases are a multi-gene family in Aedes, Anopheles, and Drosophila.
A;Accession: T14075
A;Accession: T14075
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Accession: 114075
A;Cross-references: EMBL:AF026492; NID:g2564720; PID:g2564721; PIDN:AAB81850.1
C;Genetics:
A;Genetics:
A;Genetics:
A;Genetics:
A;Introns: 462/3; 524/3; 618/1; 951/3; 1151/2
A;Introns: 462/3; 524/3; 618/1; 951/3; 1151/2
A;Introns: 462/3; 524/3; 618/1; 951/3; 1151/2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55 YKYTIQVFDPYQDDNHNSW---EKRGYERFNNLRLKNPELTTMISLGGWYEGS-EKYSDM 110
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                             468
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                                 Ö
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                                                                                                    526
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                                                                                                    HLIKCY--KEGDIPHPINIHKYLVC-----EFVNGGWWVHIMPCPPGTIW
                                                                                                                                                                           ----CPPGTLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Length 1635;
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28.8%; Score 869; DB 2; Length 16
Best Local Similarity 34.3%; Pred. No. 5e-46;
Matches 196; Conservative 95; Mismatches 196; Indels
||||:
TTPTGANPGTTQPPT--SDAPNHTTTSTTTEGNPGTTRPPSG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1105 PTYTTT----NVPSYQEIANEVDEPTCTDGRLF---
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                                                                                                                                                     ---PCAGGRYGFVPHPTNCARYYICLTADTYYBFT-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            473 PKPEPQPEPEVEVP-PTENE------VDGSEI-CNSDQDYIPDKKHCDKYWRC--
                                                                                                                                                                                                                                                                                                                                                                                                                      69 NHNSWEKRGYERFNNLRLKNPELTIMISLGGWYEGSEKYSDMAANPTYRQOFIQSVLDFL
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                                     29-Jan-1999
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                                                                                                                                                                                                                                                                                                                        84;
                                                                                                                                                           A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-554 <RRA>
A;Cross-references: GB:U02270; GB:S64757; NID:g406048; PID:g406049
Chitinaee (EC 3.2.1.14) - tobacco hornworm ('Species: Manduca sexta (tobacco hornworm) ('Species: Manduca sexta (tobacco hornworm) ('Accession: A56596 R.) Accession: A56596 R.) Copuz, L.; Choi, H.K.; Muthukrishnan, S. Insect Biochem. Mol. Biol. 23, 691-701, 1993 A.Title: Sequence of a cDNA and expression of the gene encoding A.Reference number: A56596; MuID:93357793; PMID:8353525 A.A.A.A.Ccession: A56596
                                                                                                                                                                                                                                                                                      Ouery Match
27.7%; Score 834; DB 2; Length 554
Best Local Similarity 35.9%; Pred, No. 1.8e-44;
Matches 203; Conservative 76; Mismatches 202; Indels
                                                                                                                                                                                                                   A,Experimental source: larvae
A,Note: sequence extracted from NCBI backbone (NCBIN:136417, NC
C,Keywords: glycosidase; hydrolase; polysaccharide degradation
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A53918
chitinase (EC 3.2.1.14) precursor - braconid wasp (Chelonus sp.)
c;Gpecies: Chelonus sp.
c;Date: 28-Jul-1995 #sequence_revision 28-Jul-1995 #text_change 21-Jul-2000
C;Date: 28-Jul-1995 #sequence_revision 28-Jul-1995 #text_change 21-Jul-2000
C;Accession: A53918
R;Krishnam, A.; Nair, P.N.; Jones, D.
T;Krishnam, A.; Nair, P.N.; Jul-20976, 1994
A;Title: Isolation, cloning, and characterization of new chitinase stored in active form

RESULT

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Cjaccession: 146470
R;DeSouza, M.M.; Murray, M.K.
Endocrinology 136, 2485-2496, 1995
A;Title: A nestrogen-dependent secretory protein, which shares identity with chitinases, and embryo development.
A;Reference number: 146470; MUID:95269691; PMID:7750470
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249 NGATRDKIVMGVPFYGRAMSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQK 308
                                                                                                                                                                                                                                   288 KGMPKEKIIVGMPIYGRGWTLINNASAINPGTSGSPAKITQYVQ-EAGVGAYFEFCEMLAN 346
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C,Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C,Date: 16-Aug-1996 #sequence_revision 16-Aug-1996 #text_change 05-Nov-1999
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                                                                                                                                                                                                                                                                                                                                        347 GATR-YWDSQSQVPYIVQGNQWWSYDDESSFANRWAYVRREGYGGAFVWTLDFDDFNAGC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 406 SNSNGQLYPLISVIAKELGG-----VIIPKKGGVTTAPTTVATTVTTGRPPMTSAVTT
                                                                                      189 AYDIKELNKLEDWANVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLN
                                                                                                                                                                                                                                                                                                              EEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHC
                                                                                                                                                                                                                                                                                                                                                                                                                         369 GPKN----PLLNKVHNMINGDEKNSFECIL---GPSTTTPT-----PTTTPTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             459 TTAATTTTTRAATTTTASNTNVCSGKSDGFYPNSNNCGLFVLCLSSKSYSMSCPSGLQYS
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.larity 34.4%; Pred. No. 4.7e-35;
Conservative 85; Mismatches 180;
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-539 <DES>
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Best Local Similarity
Matches 171; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAY 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DIKELNKLFDWMVWTYDYHGGWENFYG-HNAPLYKRPDETDELHTYFNVNYTMHYYLNN 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCG 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQLFQKE 309
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                                                                                                                                                                                                                                                                                                                                                                                      20 SPNKVVCYFGAMSVYRQGNGKFDINGIDPTLCTHLIYSFVGVN--GKDVKVLDPWSDLPG 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Species: Caenorhabditis elegans
Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999
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                                                                                                                                                                                                                                                                                                                                                 12 NEWRIVCYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     370 PKNPLLNKVHNMINGDEKNSFECILGPSTT---TPTPTTTPTTTPTTPSPTTP 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKYPVLKALNSVLGRGGSSS-----PAETKRKNNVPDDQPAPPRSFAEDSAPEAP 421
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                                                                                                                                                                                                                                      DB 2; Length 483;
     A,Reference number: A53918; MUID:94342256; PMID:8063715
A;Accession: A53918
A;Status: preliminary
A;Molecule type: mRNA
A;Restdues: 1-483 «KRI>
A;Cross-references: GB:U10422; NID:g533504; PIDN:AAA61639.1; PI
C;Keywords: glycosidase; hydrolase; polysaccharide degradation
                                                                                                                                                                                                                                Query Match
26.6%; Score 801.5; DB 2; Length 4
Best Local Similarity 38.0%; Pred. No. 1.6e-42;
Matches 158; Conservative 82; Mismatches 157; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23.4%; Score 705.5; DB 2;
larity 30.2%; Pred. No. 2.1e-36;
Conservative 90; Mismatches 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein CO4F6.3 - Caenorhabditis elegans
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Best Local Similarity
Matches 178; Conserv
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Cartilage glycoprotein gp39 precursor - human N;Alternate names: 39K synovial protein C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Accession: A49562; S10677; Ā33162 R;Hakala, B.E.; Mhite, C.; Reckliss, A.D. J. Biol. Chem. 268, 25803-25810, 1993 A;Title: Human cartilage gp-39, a major secretory product of articular chondrocytes and A;Reference number: A49562; MUID:94064658; PMID:8245017
                                              Oviductal glycoprotein - human
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 29-May-1998
C;Accession: 138605
B;Arias, E.B.; Verhage, H.G.; Jaffe, R.C.
Biol. Reprod. 51, 685-694, 1994
A;Title: Complementary deoxyribonucleic acid cloning and molecular characterization of A;Reference number: 138605, MuID:95119256; PMID:7819450
A;Accession: 138605
A;Accession: 138605
A;Accession: Lype: mRNA
A;Molecule type: mRNA
A;Residues: 1-654 <a href="Ress">RES></a>
A;Cross-references: EMBL:U09550; NID:9529147; FID:9529148
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 VLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAFEPHG-----YLLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               353 MVWTLDMDDVRGTFCGTGPPPLVYVLNDILVRAEFS-----STSLPQFWLSSAVNSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 PYODDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDWAANPTYROOFIOS
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                                                                                                                                                                                                                                                                                                                                                                                                                 69;
                                                                                                                                                                                                                                                                                                                                                                22.1%; Score 667.5; DB 2; Length 654; larity 33.7%; Pred. No. 5.2e-34; Conservative 86; Mismatches 187; Indels 69.
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Matches 174; Conserva
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A;Status: preliminary
A;Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Oct-1995. #sequence_revision 03-Nov-1995 #text_change 05-Nov-1999
C;Date: 28-Oct-1995. #sequence_revision 03-Nov-1995 #text_change 05-Nov-1999
C;Accession: S57197.
R;Sendai, Y.; Abe, H.; Kikuchi, M.; Satch, T.; Hoshi, H.
Biol. Reprod: 50, 927-934, 1994
A;Title: Purification and molecular cloning of bovine oviduct-specific glycoprotein.
A;Reference number: S57197; MUD:94257768; PMID:8199272
A;Accession: S57197
A;Accession: S57197
A;Accession: S57197
A;Actus: preliminary
A;Molecula type: mRNA
A;Residues: 1-537 < SEN>
A;Cross-references: EMBL:D16639; NID:g391621; PIDN:BAA04065.1; PID:d1004583; PID:g391622
C;Keywords: glycoprotein
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                                                        410
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124 VLDFLQEYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YILT 176
           354
                                                                                                  404
                                                                                                                                              455
                                                                                                                                                                                        RIGPEMPTMTRDLTTGLGILPLGGEAVATETHRKSATWTTTPRGETATPTRTPLSSGRRT 464
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:| : ::||| |: : : | | | HDGAAH--KINCYFTNWA-FSRRGPASILPRDLDPFLCTHLVFAFASMSNNQ--IVPKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGV
                                                        WSLENDDFKGH-CGP-KNPLLNKVHNMINGDEKNSFECILGPSTTTPTP----TTTPTTP
                                                                                 6 HNDYSKNPMRIVCYVGTWSVYHKVDPYTI---EDIDPFKCTHLMYGFAKIDBYKYTIQVFD
TTTPSPTTPSPTTPTTP------TTTPSPTTTPTTTPSPTTTTPSPTTPTTT-TP----T
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                                                                                                                                                                                                                                                                                                                                                                                S57197 oviduct-specific glycoprotein 95K precursor - bovine (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90; Mismatches 179; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22.3%; Score 673; DB 2; 33.7%; Pred. No. 1.8e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAPITISTPSP----TITTEHTSETP 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       || | | | : : | AAPEGKTESPGEKPLTTVGHLAVSP
                                                                                                                                                                                                                                         PAPITISTPSPITITEHTS 472
                                                                                                                                                                                                                                                                                   AAPEGKTESPGEKPLTS 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 33.74
Matches 170; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297
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Dreasf-regressing protein brp39 precursor - mouse (15pecies: Mus musculus (house mouse) (15pecies: Mus musculus (house mouse) (15pecies: Mus musculus (house mouse) (15pecies: Mus musculus) (15pecies: Mus musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pecies: Musculus) (15pe
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         303 LQGAT--VRRPLGQQVPYATKGNQWVGYDDQBSVKNKAKYLKSRQLAGAMVWTLDLDDFR 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
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                                                                                                                                                                                                                                                                                                                                                                       244 VLRLGAPANKLVMGIPTFGRSFTLAS-SKTDVGAPASGPGIPGRFTKEKGILAYYEICDF 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131 YGFDGLDLAWLYPRLR-----DKOYFSTLIKELNAEFTKEVOPGREKLLLSAALSAGKV 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMH 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AIDTGYDIAQIAQHLDFINLMTYDFHGVWRQITGHHSPLFQGQKDT-RFDRYSNVNYAVQ 243
73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Residues: 1.245, I',247-330,'H',332-350,'NVWALDLDDFQGTCQPKEFFPLTNAIKDALA' < A;Cross-references: EMBL:X93035; NID:g1085065; PIDN:CAA63603.1; PID:g1085066 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Residues: 1-405 <MOR1>
A;Cross-references: EMBL:X93035; NID:g1085065; PIDN:CAA63603.1; PID:g1085066
R;Morrison, B.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF ---- EP--HGYLLTAAVSPGKD
                                                                                         KPDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK
                                                                                                                                                                                                               IDRAYDIKELNKLFDWMVVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
                                                                                                                                                                                                                                                        246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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;2-2-405/Product: breast-regressing protein brp39 #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 405;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the EMBL Data Library, November 1995
A;Reference number: S61S50
A;Accession: 861S50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A, Accession: 861551
A, Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GH-CGP--KNPLLNKVHNMI 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GNFCGONLRFPLTSAIKDVL 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-245.'T'
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        243 YMLRLGAPASKLVMGIPTFGRSFTLAS-SETGVGAPISGPGIPGRFTKEAGTLAYYEICD 301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33 KLVCYYTSWSQYREGDGSCFPDALDRFLCTHIIYSFANI-----SNDHIDTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EWNDVTLYGMLNTLKNRNPNLKTLLSVGGMNFGSQRFSKIASNTQSRRTFIKSVPPFLRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     heparin-binding glycoprotein 38K - pig
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 19-Mar-1997 #text_change 22-Jun-1999
C;Accesion: 851327
R;Shackelton, L.M.; Mann, D.M.; Millis, A.J.T.
Submitted to the EMBL Data Library, January 1995
A;Description: Identification of a 38kDa heparin-binding glycoprotein (gp38
A;Reference number: S51327
A;Accession: S51327
A;Atatus: preliminary
A;Atatus: preliminary
A;Residues: 1-383 - SSHA
A;Residues: 1-383 - SSHA
A;Residues: BmBL:247803; NID:9634097; PIDN:CAA87764.1; PID:9634098
C;Superfamily: Streptomyces chitinase chi40
                                                                                                                               to a bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 RIVCYVGTWSVYHKVDPYTIED-IDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EKRG---YERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 YKFDGLDLDWEYPGSRLGNPKIDKONYLALVRELKDAF----EP--HGYLLTAAVSPGKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KIDRAYDI KELINKI FDWMVMTYDYHGGWEN FYGHNA PLYKR PDETDELHTY FNVNYTMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      305 LFOKEEWHIQYDEYYNAPYGYNDKIWYGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 RIVCYVGTWSVYHKVDPYTIED-IDPFKCTHLMYGFAKIDEYKY-TIQVFDPYQDDNHNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
   A; Residues: 1-383 < HAK>
A; Residues: 1-383 < HAK>
A; Cross : references: GB: M80927; NID: g348911; PIDN: AAA16074.1; PID: g348912
R; Nyirkos, P.; Golds, E. B.
Biochem. J. 269, 265-268, 1990
A; Title: Human synovial cells secrete a 39 kDa protein similar to a bovir A; Reference number: S10677; MUID: 90328983; PMID: 2375755
A; Residue type: protein
A; Residues: 22-40, X', 42-45 < NYZ>
C; Superfamily: Streptomyces chitinase chi40
C; Superfamily: Streptomyces chitinase chi40
C; Reywords: cartilage; extracallular protein; glycoprotein
F;1-21/Domain: signal sequence #status predicted < SIG>
F;22-383/Product: cartilage glycoprotein gp39 #status predicted < NAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 383;
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                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
21.9%; Score 660; DB 2; Le
Best Local Similarity 37.0%; Pred. No. 7.5e-34;
Matches 141; Conservative 75; Mismatches 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130;
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larity 36.6%; Pred. No. 3.2e-33;
Conservative 77; Mismatches 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KG-HCGP--KNPLLNKVHNMI 382
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Best Local Similarity
Matches 139; Conserv
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Length 504;

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76 RGYERFNNIRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDG 135
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        143 FOLDWEYPVGVABEHAKLVEAMKTAFVEBAKTSGKQR-LLLTAAVSAGKGTIDGSYNVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LINKL. PDWMIVMTY DYHGGWEN FYGHNA PLYKR PDETDELHTY FINVNY TMHYYLINNGATRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFQKEEWHIQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27 CYYTHWAQYRDGEGKFLPGNIPNGLCTHILYAFAKVDB----LGDSKPFEWNDEDTEWSK
                                                                                                                                                                                                                                                                                                                                                                                                  GMYSAVTKLRETNPGLKVLLSYGGYNFGSAIFTGIAKSAQKTERFIKSAIAFLKKNNFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             202 LGKNFDLLFLMSYDLHGSWEKNVDLHGKCHPTKGEVSGI-GIFNTEFAADYWASKGMPKE
                                                                                                                                                                                                                                                                                   18 CYVGTWSVYHKVD-PYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQ-DDNHNSWEK
                                                                                     A,Residues: 1-504 <FUH>
A,Residues: 1-504 <FUH>
A,Cross-references: GB:M73689; NID:g156063; PIDN:AAA27854.1; PID:g156064
A,Note: sequence extracted from NCBI backbone (NCBIP:85345)
C,Keywords: glycosidase; hydrolase; polysaccharide degradation
                  A; Accession: A38221
A; Status: preliminary; not compared with conceptual translation
A; Molecule type: nucleic acid; protein
                                                                                                                                                                                           Query Match

20.1%; Score 604.5; DB 2; Length
Best Local Similarity 30.1%; Pred. No. 3.1e-30;
Matches 156; Conservative 86; Mismatches 208; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               489 -YKEGDIPHPINIHKYLVCEFVNGGWWVHIMPCPPGTIW 526
A; Reference number: A38221; MUID:92179220; PMID:1542646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 29.6<sup>5</sup>
Matches 179; Conservative
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                                                                                                                                                                                                                                                                                                                          Secretory protein YM-1 precursor - mouse C;Species: Mus musculus (house mouse) C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 22-Jun-1999 C;Date: 17-Apr-1999 #sequence_revision 17-Apr-1993 #text_change 22-Jun-1999 C;Accession: S27879 R;Chang, N.C.A.; Liu, C.H.; Chang, A.C. submitted to the EMBL Data Library, June 1992 A;Bescription: Molecular characterization of a secretory protein (YM-1) transiently expl A;Accession: S27879 A;Accession: S27879 A;Accession: S27879 A;Residues: 1-399 <CHA>
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A3821
Cibitinase (EC 3.2.1.14) MF1 - nematode (Brugia malayi)
C;Species: Brugia malayi
C;Species: Brugia malayi
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C;Accession: A3821
R;Fuhrman, J.A.; Lane, W.S.; Smith, R.F.; Piessens, W.F.; Perler, F.B.
Proc. Natl. Acad. Sci. U.S.A. 89, 1548-1552, 1992
A;Title: Transmission-blocking antibodies recognize microfilarial chitinase in brugian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLCQLFQK---EEWHIQYDBYYNAPYGYNDKIWVGYDDLASISCKLAFIKELGVSGVMVW 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GIIDVIKSGTRSLNCLSLLDYIQVMTYDLHDPKDGYTGENSPLYKSPYDIGK-SADLNVD 245
                                                                                            305 LFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGV----MVWSLE 360
                                                                                                                       303 FLKGABVHRLSNE--KVPFATKGNQWVGYEDKESVKNKVGFLKEKKLAGAWCGHWIWMI- 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWEKRGYERFINNIR-LKANPELTTMISLGGWYEGSEKYSDWAANPTYRQOFIQSVLDFLQE 130
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DKIDRAYD-IKELN--KLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVN 240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244 YMTRLGAQASKLIMGIPTFGKSFTLAS-SENQLGAPISGEGLPGRFTKEAGTLAYYEICD 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15 RIVCYVGTWSVYHKVD-PYTIEDIDPPKCTHLMYGPAKI--DEYKYTIQVFDPYQDDNHN 71
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           YYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQ 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:M94584; NID:g202441; PIDN:AAB62394.1; PID:g202442
C;Superfamily: Streptomyces chitinase chi40
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-399/Product: secretory protein YM-1 #status predicted <MAT>
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                                                                                                                                                                                                                                 ---SSRSPIPSRMP 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20.2%; Score 60%; DB 2; Length 399; 36.3%; Pred. No. 1.4e-30; ive 67; Mismatches 140; Indels
                                                                                                                                                                                    361 NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 PLDMDDFSGSFCHORHFPLTSTLKGDLN 389
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 36.33
Matches 141; Conservative
                                                                                                                                                                                                                                    ----SGHCOPKN-
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                                                                                                                                                                                                                                                                                                     RESULT 12
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CjAccession: D83764
R; Takami, H; Nakasone, K; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Hirar Nucleic Acids Res. 28, 4317-4331, 2000
Nucleic Acids Res. 28, 4317-4331, 2000
A; Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and capture complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and captures. D83764
A; Reference number: A83650; MUID:20512582; PMID:11058132
A; Accession: D83764
A; Status: preliminary
A; Residues: 1-599 <STO>
A; Cross-references: GB:AP001510; GB:BA000004; NID:g10173440; PIDN:BAB04635.1; GSPDB:GN001A; Experimental source: strain C-125
A; Genetics:
A; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29;
chitinase BH0916 [imported] - Bacillus halodurans (strain C-125)
C;Species: Bacillus halodurans
C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 15-Jun-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19.5%; Score 588; DB 2; L 29.6%; Pred. No. 4.1e-29; tive 91; Mismatches 200;
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	C; Superfamily: fibronectin type III repeat homology C; Keywords: glycosidase; hydrolase; polysaccharide degradation Query Match Best Local Similarity 29.4%; Pred. No. 2.4e-27; Matches 170; Conservative 67; Mismatches 185; Indels 156; Gaps 23; Qy 15 RIVCYUGTWSVYHKUDPYTIEDIDPPKCTHLMYGFAKI
	RESULT 15 A38368 chitinase (EC 3.2.1.14) precursor - Bacillus circulans C;Species: Bacillus circulans C;Species: Bacillus circulans C;Species: Bacillus circulans C;Abts: 28-504-1991 #sequence_revision 28-Jun-1991 #text_change 15-Oct-1999 C;Accession: A38368 R;Watanabe, T.; Suzuki, K.; Oyanagi, W.; Ohnishi, K.; Tanaka, H. J. Biol. Chem. 265, 15659-15665, 1990 A;Title: Gene cloning of chitinase A1 from Bacillus circulans WL-12 revealed its evoluti A;Reference unaber: A38368; WUID:90368776; PMID:2203782 A;Accession: A38368 A;Status: preliminary A;Molecule Lype: DNA A;Residues: 1-699 < WAT> A;Cross-references: GB:M57601; GB:J05599; NID:g1066341; PIDN:AAA81528.1; PID:g142688
	Oy 525IW 526
Search completed: March 22, 20, Job time : 35.8594 secs	Qy 475 PKYTTYVDGHLIKCYKEGD-IPHPINIHKYLVCEFVNGGWWVHIMPCPPGT 524
OTQAE	OY 431PITTESPITPTPEPTTPTPAPITSTPSPITTEHTSET 474 DD 479 WQAPIEBPIQYSVAYDSKEKITHITIIIBDLQPETIYIFVVSAEHKDGIRHAGQALQVT 538
440	434NGTLLTALADQLGFTPHEGQEPEEPSGAPINIQATEVTSTTVTLT
Qy 418Dy 487 ASTDNVGVTGYNVYNGA	Db 381 RYWNDVAKVPPLYNATHGNFITYDDEESFRYKTDFIKSNNIAGSMFWDVSGDR 433 Ov 371 KNPLLNKVHNMINGDEKNSFECILGPSTTTPTFTTPTTPTTPTFPSPTT 430
Cy 376 NKVHNMINGDEKNSFEC : : Db 442 -TLQNKIKAD	Db 330 MPFYGRGWSNCDGANQGBYQR-CAPPREGTWENGVFDFSDLEDHYINKNGYQ 380 Qy 317 EYYNAPYGYNDKIWVGYDDLASISCKLAPLKELGVSGYMVWSLENDDFKGHCGP 370
392	260 VPFTGRAWSIEDESKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFOKEBWHIQYD
Db 340 kGWDGCAQAGNGQYQTC Qy 321APYGYNDKIWVG	CY 203 NVMTYDYHCGWENFYCHNAPLYKRPDETD-ELHTYENVNYTWHYYLNNGATRDKLVMG 259
Db 281 FNGAWGKISAHNAPLNY Qy 265 RAWSIEDRSKLKGDPP	QY 152 -IDKQNYLALVRELKDAFEPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWM 202
Db 222 QNYTLLLSKIREKLDAA Qy 209 YHGGWENFYGHNAPLYR	QY 95 ISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKFDGLDLDWEYPGSRLGNPK- 151
Db 163 GW-TWSNRFSDVAATAA Qy 155 QNYLALVRELKDAFEPH	QY 52IDEYKYTIQVFDPYQDDNHNSWEKRG-VERFNNLRLKNPELTTM 94
Db 103 NEKSQTINVPNGTIVLG Qy 99 GWYEGSEKYSDMAANPT	Qy 10 SKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAK 51

PHG-----YLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYD 208 PAKGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQ---YDEYN- 320 YKRPDET----DELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYG 264 VGYDDLASISCKLAPLKELGVSGVMVWSLENDDFKGHCGPKNPLL 375 GANLATSVTGTTATISGLTAGTSYTFTIKAKDAAGNLSAASNAVT 546 GDDPWIDTGKTFAGDTWDQPIAGNINQLNKLKQTNPNLKTIISVG 162 PTYRQQFIQSYLDFLQSYKFDGLDLDWEYP--GSRLGNPK--1DK 154 ------LPTGGTVPPVDTTAPSVPGNARSTGVTANSVTLAWN 486 TPTP-APTISTPSPTTIEHTSET 474 APTNLASTAQTTSSITLSWTAST 584

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March 22, 2004, 06:42:54 ; Search time 43.2018 Seconds (without alignments) 640.518 Million cell updates/sec
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3014
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3: /ogn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /ogn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /ogn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
6: /ogn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
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Compugen Ltd.
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GenCore
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Maximum DB seq length: 200000000
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Perfect score:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Result No.	Score	Query Match	Length	DB	QI	Description	
; ; ; ;	3014	100.0	536	4,	22	21	
04	3014	100.0	555	4	-09-292-225-1	15	_
m	3014	100.0	555	4	-09-292-225-1	Sequence 18, Appl	_
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25	721.5	23.9	373	m	-09-0	Sequence 14, Appl	_
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	721.5	23.9	373	4	7-599-	equence 14	_

Sequence 15, Appl Sequence 14, Appl	Sequence 15, Appl Sequence 29, Appl	Sequence 17, Appl	4,	Sequence 2, Appli	Sequence 2, Appli	Sequence 13, Appl	Sequence 2, Appli	Sequence 1, Appli	Sequence 7, Appli	Sequence 10, Appl	Sequence 12, Appl	Sequence 2, Appli	ď	Sequence 2, Appli
US-08-877-599-15 US-09-267-574-14	US-09-267-574-15 US-09-545-814-29	US-09-459-749D-17	US-08-694-915-4	US-08-850-348A-2	US-09-408-647A-2	US-09-052-778-13	US-09-052-778-2	US-07-939-501A-1	US-08-448-398-7	US-07-939-501A-10	US-07-939-501A-12	US-08-358-901-2	US-08-566-347-2	US-08-693-835-2
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ALIGNMENTS

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gequence 21, Application US/0929225

Patent No. 645566

GENERAL INFORMATION:

APPLICANT: McCall, Catherine A.

APPLICANT: Weber, Eric R.

TITLE OF INVENTION: AND USES THEREOF

FILE REFERENCE: AL-2-C3

TITLE OF INVENTION NUMBER: US/09/292,225

CURRENT PELICATION NUMBER: 60/098,909

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER APPLICATION NUMBER: 60/098,565

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EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER PILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE: PatentIN Ver. 2.0

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100.0%; Pred. No. 1.2e-232;
iive 0; Mismatches 0;
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; ORGANISM: Dermatophagoides farinae
US-09-292-225-21
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Best Local Similarity 100.
Matches 536; Conservative
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Sequence 18, Application US/0929225
Fatent No. 6455666
GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: Mcber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHACOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AUD USES THEREOF
FILE REFERENCE: AL-2-C3
CURRENT FILING DATE: 1999-04-15
EARLIER APPLICATION NUMBER: 60/098, 909
EARLIER PILING DATE: 1998-05-13
EARLIER PILING DATE: 1998-05-13
EARLIER PILING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: 60/098, 565
EARLIER APPLICATION NUMBER: 60/098, 565
EARLIER APPLICATION NUMBER: 60/098, 565
EARLIER PILING DATE: 1998-04-17
NUMBER OF SEQ ID NOS: 49
SEQ ID NO 18
LEARLIER FILING DATE: 2.0
SEQ ID NO 18
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SEQ ID NO 18
LEARLIER FILING DATE: 2.0
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                                                           ELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE
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100.0%; Score 3014; DB 4; Length 555;
Best Local Similarity 100.0%; Pred. No. 1.3e-232;
Matches 536; Conservative 0; Mismatches 0; Indels 0
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US-09-292-225-18
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Patent No. 6455686

GENERAL INFORMATION:
APPLICANT: HUNCEY, Shirley Wu
APPLICANT: HUNCEY, Shirley Wu
APPLICANT: WEBER, Brick
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: AL.2-C3
CURRENT APPLICATION NUMBER: 60/098,909
EARLIER FILING DATE: 1999-04-15
EARLIER PRILING DATE: 1998-05-13
EARLIER PRILING DATE: 1998-05-13
EARLIER PRILING DATE: 1998-04-17
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EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER PADPLICATION NUMBER: 09/062,013
EARLIER FILING DATE: 1998-04-17
EARLIER PADPLICATION WINDER: 00/090,565
EARLIER FILING DATE: 1998-04-17
EARLIER FILING DATE: 1998-04-17
EARLIER PADPLICATION NUMBER: 09/062,013
EARLIER PADPLICATION NUMBER: 09/062,013
EARLIER PADPLICATION NUMBER: 09/062,013
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EARLIER PADPLICATION NUMBER: 09/062,013
EARLIER PADPLICATION NUMBER: 09/062,013
EARLIER PADPLICATION NUMBER: 09/062,013
NDDFKGHCGFKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTTPTTTPSPT 420
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100.0%; Score 3014; DB 4; Length 555;
Best Local Similarity 100.0%; Pred. No. 1.3e-232;
Matches 536; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , ORGANISM: Dermatophagoides farinae US-09-292-225-15
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SEQ ID NO 15 LENGTH: 555

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DD 363 DFKGHCGPKYPLLNKVHNMINGDEKNSYECLLGPSTTTPTPTFTFTFT	QY 423 TITPSPTTTTPSPTTTPSPTTPTTTPTPAPTTSTFAPTTSTFSPTTEHTSETTEKX	Db 416PTTTDSTSETPKY Qy 483 GHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIMCQEKLTCI	Db 434 GHLIKCYKQGYLPHPTDVHKYLVCEYIATPNGGWWVHIMDCPKGTRWHATLKNCI RESULT 5	US-09-292-225-35 ; Sequence 35, Application US/09292225 ; Patent No. 645566 ; GENERAL INFORMATION: ; APPLICANT: McCall, Catherine A. ; APPLICANT: Hunter, Shirley Wu	; APPLICANT: Weber, Eric R. ; TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, ; TITLE OF INVENTION: AND USES THEREOF ; FILE REFERENCE: AL. 2 - CA. ; CURRENT APPLICATION NUMBER: US/09/292, 225	CURRENT FILING DATE: 1999-04-15 RARLIER APPLICATION NUMBER: 60/098,909 RARLIER FILING DATE: 1998-09-02 RARLIER APPLICATION NUMBER: 60/085,295 RARLIER PILING DATE: 1999-05-13	; EARLIER APPLICATION NUMBER: 60/098,565 ; EARLIER FILING DATE: 1998-04-17 ; EARLIER APPLICATION NUMBER: 09/062,013 ; BRRITER PILING DATE: 1998-04-17	; NUMBER OF SEQ ID NOS: 49 ; SOFTWARE: Patentin Ver. 2.0 ; SEQ ID NO 35 ; LENGTH: 509 ; TYPE: PRT CORANISM: Dermatonhamoides farinae	; Score 2475; DB 4; Length 509 ; Pred No. 1.3e-189;	Conservative KRDHNDYSKNPMRIVCY		123	OY 183 KDKIDRAYDIKELNKIFDWMNVNTYDYHGGWENFYGHNAPLYKRPDETDELHTYI	QY 243 MHYYLANGATRDKLVMGVPPYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVJ 	303	363	OY 423 TYTPSPTTPTTPSPTTTPSSPTTPTTPSPTTPTPTPTPTP
	Qy 361 NDDFKGHCGFKNPLLNKVHNMINGDEKNSFECILGESTTTFTPTTTFTTBTTBSPT 420 Db 380 NDDFKGHCGFKNPLLNKVHNMINGDEKNSFECILGESTTTFTPTTFTFPFT 439	421	481 VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPFGTIWCQEKLTCIGE 536	SULT 4 -09-292-225-41 Sequence 41, Application US/09292225 Patent No. 6455686	; GENERAL INFORMATION: ; APPLICANT: McCall, Catherine A. ; APPLICANT: Hunter, Shirley Wu ; APPLICANT: Weber, Siric R. ; APPLICANT: Weber, Siric R. ; TITE OF INVENTION: NOVEL DEPARTMENT OF THE PROPERTY.		; EARLIER FILING DATE: 1998-09-02 ; EARLIER APPLICATION NUMBER: 60/085,295 ; EARLIER FILING DATE: 1998-05-13 ; EARLIER APPLICATION NUMBER: 60/098,565	; EARLIER FILING DATE: 1998-04-17 ; EARLIER APPLICATION NUMBER: 09/062,013 ; EARLIER FILING DATE: 1998-04-17 ; NUMBER OF SEQ ID NOS: 49 ; SOFTWARE: Patentin Ver. 2.0		Query Match Best Local Similarity 82.5%; Pred. No. 1.2e-189; Matches 443; Conservative 21; Mismatches 21; Indels 52; Gaps 2;	Oy 3 KRDHNDYSKNPMRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF 62 	Qy 63 DPYQDDNHNSWEKRGYERFNNLRLKNPELLTMISLGGWYEGSEKYSDWAANPTYRQQFIQ 122 :	QY 123 SVLDFIQBYKFDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHGYLLTAAVSPG 182	QY 183 KDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYT 242	CY 243 MHYYLANGGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL 302 	OY 303 CQLPQKEBWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 362	Qy 363 DFKGHCGFKNFLLNKVHNMINGDEKNSFECILGPSTTTPTPTTPTTPTTPTTPTTP 422

; Gaps 2;

YKYTIQVF 62

YKYTIQVF 81 TYFNVNYT 242 |||||||| |YFNVNYT 261 MVWSLEND 362 |:||||| MIWSLEND 381 TYRQQFIQ 122 |||||||:| TYRQQFVQ 141 LTAAVSPG 182 |||||||| LTAAVSPG 201 TPSPTTP 422 PKYTTYVD 482 S, PROTEINS PT----- 415 CIGE 536 || | |CIQE 490

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134 KKYDFDGLDLDWEYPGAADRGGSFSDKDKFLYLVQELRRAFIRVGKGWELTAAVPLANFR 193
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       483 GHLIKCYKEGDIPHPINIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE 536
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246 YLNNGATRDKLVMGVPFYGRAWSIED------RSKLKLGDPAKGMSPPGFISGEE
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                                                                                                                                                                                                                               APPLICANT: Kramer, Karl J.
APPLICANT: Kramer, Karl J.
APPLICANT: Muthukrishnan, Subbaratnam
APPLICANT: Choi, Hee Kyung
APPLICANT: Corpuz, Loilte
APPLICANT: Gopalakrishnan, Bhuvana
TITLE OF INVENTION: RECOMBINANT CHITINASE AND USE THEREOF AS
TITLE OF INVENTION: A BIOCIDE
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 35.9%; Score 834; DB 2; Length 55 Similarity 35.9%; Pred. No. 1.8e-58; Conservative 76; Mismatches 202; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER TRADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/524,051
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INPORMATION:
NAME: COllins, John M.
REGISTRATION NUMBER: 26,262
                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Hovey, Williams, Timmons & Collins STREET: 2405 Grand Blvd., Suite 400 CITY: Kansas City STATE: MO COUNTRY: USA
                                                                                                                                                                   Sequence 2, Application US/08524051
Patent No. 5866788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 2:
TELECOMMUNICATION INFORMATION
TELEPHONE: (816)474-9050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INPORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 554 amin
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amino acid
GY: linear
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                                                                                                                                                                                                                GENERAL INFORMATION:
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                                                                                                                   RESULT 7
US-08-524-051-2
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Best Local 8
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                                                                                                                                                                                                       Sequence 38, Application US/0929225

| Sequence 38, Application US/0929225
| Patent No. 6455686
| GENERAL INFORMATION:
| APPLICANT: McCall, Catherine A. APPLICANT: McCall, Catherine A. APPLICANT: McCall, Catherine A. APPLICANT: McDer, Eric R. TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
| TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
| FILE REFERENCE: AL-2-C3
| CURRENT FILING DATE: 1998-04-15
| EARLIER FILING DATE: 1998-09-13
| EARLIER FILING DATE: 1998-05-13
| EARLIER FILING DATE: 1998-04-17
| EARLIER PREDICATION NUMBER: 60/098,565
| EARLIER APPLICATION NUMBER: 60/098,565
| EARLIER PREDICATION NUMBER: 09/662,013
| EARLIER FILING DATE: 1998-04-17
| NUMBER OF SEQ ID NOS: 49
| SEQ ID NO 38
| LENTH: 509
DPYQDDNHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQ 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 322 CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMIWSLEND 381
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                                                                                           22 KRDHNYYSKNPWRIVCYVGTWSVYHKVDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVF
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                                                                GHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cch 82.1%; Score 2475; DB 4; Length 509; al Similarity 82.5%; Pred. No. 1.3e-189; 443; Conservative 21; Mismatches 21; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Dermatophagoides farinae
US-09-292-225-38
                                                                                                                                                                               RESULT 6
US-09-292-225-38
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Best Local S:
Matches 443
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                       GENERAL INFORMATION:
APPLICANT: Becher, Anna M.
TITLE OF INVENTION: PLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: PLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: 1092 THEREOF
FILE REFERENCE: FC-5-C1
CURRENT APPLICATION NUMBER: US/09/545,814
CURRENT PILING DATE: 2000-04-07
PRIOR PILING DATE: 1999-04-07
NUMBER OF SEQ ID NOS: 40
SOFTWARE: PATENTIN VET: 2.1
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                                                                                            451 P-TTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGHLIKCYKEGD-IPHPTNIHKYLVCEF
                                                                                                                                          -----VDGSEI-CNSDQDYIPDKKHCDKYWRC--
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Indels
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                                                                                                                                                                                                509 VNGGWWVHIMPCPPGTIWCQEKLTC
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; Sequence 2, Application US/09545814
; Patent No. 6416977
                                                                                                                                             PKPEPQPEPEVEVP-PTENE--
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LENGTH: 583
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GVLSYIELCQLFQKEE--WHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVS 352
--WAYYEICTEVDKDDSGWTKKWDEQGKCPYAYKGTQWVGYEDPRSVEIKWMIKQKGYL 365
                                                                                                                                  GAMTWAIDMDDFQGLCGEKNPLIKILHKHMS------SYTVPPPHTENTTPTP 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFL 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129 QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAF--EPHGYLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186 IDRAYDIKELNKLFDWMWYMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFWWYTMHY 245
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                                                                                                                                                                                                  P-TIPIPAPITSIPSPITIEHISEIPKYTIYVDGHLIKCYKEGD-IPHPINIHKYLVCEF 508
                                                                                                   GVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTPTFT- 411
                                                                                                                                                                                                                                                 413 EWARPPSTPSDPSEGDPIPTTTAKPASTTKTTVKTTTTTTAKPPQSVIDEENDINVRPE 472
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US-09-012-778-16

Sequence 16, Application US/09052778A

Patent No. 6060590

APPLICANT: Bryant, Peter J.

APPLICANT: Kawamira, Kazuo

TITLE OF INVENTION: CF USE

TITLE OF INVENTION: CF USE

FILE REPERRNCE: 07306/015001

CURRENT APPLICATION NUMBER: US/09/052,778A

CURRENT FILING DATE: 1998-03-31

NUMBER OF SEQ ID NOS: 16

SOFTWARE: FREUSEQ for Windows Version 4.0

LENGTH: 554
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 VNGE--AMQFSCQHGTVFNVELNVC 540
                                                                                                                                                                                                                                                                                                                                                                                                        VNGGWWVHIMPCPPGTIWCQEKLTC 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Manduca sexta
US-09-052-778-16
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89 83 128

185

245 257 416

359 377

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Sequence 14, Application US/09545814

Patent No. 6416977

GENERAL INFORMATION:

APPLICANT: Becher, Anna M.

TITLE OF INVENTION: FIEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE OF INVENTION: USES THEREOF FILE CURRENT APPLICATION NUMBER: US/09/545,814

CURRENT FILING DATE: 2000-04-07

PRIOR APPLICATION NUMBER: 60/128,833

PRIOR FILING DATE: 1999-04-09

NUMBER OF SEQ ID NOS: 40
                                                                                                                                                                                                                                                                                               ; TYPE: PRT
; ORGANISM: Ctenocephalides felis
US-09-545-814-14
                                                                                                                                                                                                                                              PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                        Matches 195; Conservative
                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
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US-09-545-814-32
                                                                                                                                                                                                                                           SOFTWARE: Pat
SEQ ID NO 14
LENGTH: 559
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   246 YLNNGATRDKLVMGVPFYGRAWSIEDRSK-LKLG---DPAKGMSPPGFISGEEGVLSYIE 301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360 ENDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECILGPSTTTPTP--TTTPTTTPTT 416
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84 DDN-----GFKNFTNLRKIHPNVKLQIAVGGWAEGGKKYSTWVAEKRKRSAFIRSVVDFM 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         129 QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAFEPHG--YLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            139 NEYKFÖGFÖLDWEYPGAADRGGSFSDKOKFLYFVQELRRAFNKQGKNWEITMAVPIAKFR 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199 LQEGYHVPELCELLDAIHVMSYDLRGNWAGFADTHSPLYRRPHD-QYAYEKLNVNDGLQL 257
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 ---VHGEAV 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                      APPLICANT: Becher, Anna M.

TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE SPERMENCE: FC-5-C1
CURRENT PRILIGATION NUMBER: US/09/545,814
CURRENT APPLICATION NUMBER: G0/128,833
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 40
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 5
LENGTH: 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69 NHNSWEKRGYERFNNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYROOFIOSVLDFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24 SDQKARIVCYPSNWAVYRPGIGRYGIEDIPVDLCTHIVYSFIGVDDKDWSVLVIDPELDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71;
478 HEEEKPSEQDNQVGSQDTTATD---VDCSQEDYLPH-EDCNKYYRC---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   433 DTPYIPTHAPKPSRKPTRKPKPT--TTTVAATTPVAT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Score 812.5; DB 4;
; Pred. No. 1e-56;
86; Mismatches 197;
                                                                                                                     RESULT 10
US-09-545-814-5
; Sequence 5, Application US/09545814
; Patent No. 6416977
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Ctenocephalides felis
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35.6%;
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Best Local Similarity 35.6
Matches 196; Conservative
                                517 IMPCPPGTIW 526
                                                                 526 LFTCREGIVY 535
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526 LFTCREGTVY 535
                                                                                                                                                                                        GENERAL INFORMATION: APPLICANT: Becher,
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DGLDLDWEYPGSR-LGNPKIDKONYLALVRELKDAFEPHG--YLLTAAVSPGKDKIDRAY 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251 ATRDKLVMGVPFYGRAWSIEDRSK-LKLG---DPAKGMSPPGFISGEEGVLSYIELCQLF 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              365 KGHCG-PKNPLLNKVHNMINGDEKNSPECILGPSTTTPP--TTTPTTPTTTPTTPSPTT 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       414 PTTHAPKPSRKPTRKPKPT--TTTVAATTPVAT-------TTTEHHHHHEEEK 458

    Sequence 32, Application US/09545814
    Patent No. 6416977
    GENERAL INFORMATION:

            APPLICANT: Becher, Anna M.
            TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-----KYTTYVDGHLIKCYKEGDIPHPINIHKYLVCEFVNGGWWVH----IMPCP
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                                                                                                                                                                                                                                                                                                  191 DIKELNKLFDWMWMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHYYLNNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DDPSKGWTKKWDEHGKVPXAYKGNOWVGYEDPKSVALKMEFIKSKGYGGAMTWAIDMDDF
                                                                                                                                15 RIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
                                                                                                                                                                                                                                                              74 EKRGYERFINILRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKF
                                                                                                                                                                                                                                                                                                                                                                                                                                   307 Q -- KEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF
                                                                                                                                                                                            RIVCYPSNWAVYRPGIGRYGIEDIPVDLCTHIVYSFIGVDDKDWSVLVIDPELDIDDN--
                                                                  Gaps
                                                                  71;
Length 559;
                                                              Indels
26.9%; Score 811.5; DB 4; 35.8%; Pred. No. 1.1e-56; iive 86; Mismatches 193;
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us-09-662-293-21.rai

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NAME: Baron, Ronald J.
REGITSTRATION NUMBER: 29,281
REFRENCE/DOCKET NUMBER: 294-24
TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 822-3550
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                           ZIP: 11758
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
"AMDITTER: IBM PC compatible
"AMDITTER: PR PC PC POSS/MS.
                                                                                                                                                                                                                                                                                                                                 LENGTH: 466 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 34.2
Matches 152; Conservative
                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                 unknown
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 New York
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TOPOLOGY: unk
                 COUNTRY: UR
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US-09-151-011-4
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Patent No. 5928928
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: A human chitinase, its recombinant
TITLE OF INVENTION: in therapy or prophylaxis against infection diseases.
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                     DDN----GFKNFTNLRKIHPNVKLOIAVGGWAEGGKKYSTMVAEKRKRSAPIRSVVDFM 139
                                                                                                                                                                                                                                                                                                                                                                                                               129 QEYKFDGLDLDWEYPGSR-LGNPKIDKQNYLALVRELKDAFEPHG--YLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                                                                                                                                                  186 IDRAYDIKELNKLFDWMVMTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246 YLNNGATRDKLVMGVPFYGRAWSIEDRSK-LKLG---DPAKGMSPPGFISGEEGVLSYIE 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LCQLPQ---KBEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSL 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECILGPSTTTPTP--TTTPTTPTT 416
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                                                                                                                                                                                                                                                                                     89
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                                                                                                                                                                                                                                                                                     10 SKNPMRIVCYVGTWSVYHK-VDPYTIEDIDPFKCTHLMYGFAKIDBYKYTIQVFDPYQDD
                                                                                                                                                                                                                                                                                                       SDOKARIVCYFSNWAVYRPGIGRYGIEDIPVDLCTHIVYSFIGVDDXDWSVLVIDPELDI
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                     71;
                                                                                                                                                                                                                     26.9%; Score 809.5; DB 4; Length 635; 35.6%; Pred. No. 2e-56; Live 85; Mismatches 198; Indels 71
TITLE OF INVENTION: USES THEREOF
FILE REFERENCE: PC-5-C1
CURRENT APPLICATION NUMBER: US/09/545,814
FURBURT FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: 60/128,833
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 40
SOFTWARE: PatentIn Ver. 2.1
LENGTH: 635
                                                                                                                                                                        ) ORGANISM: Tagged Ctenocephalides felis US-09-545-814-32
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350 Jericho Turnpike
                                                                                                                                                                                                                        Query Match
Best Local Similarity 35.6
Matches 196; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             536
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LFTCREGTVY
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STREET: 35
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306 FQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74 -EKRGYERFINILRIKNPELITMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYK 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PDGLDLDWEYPGSRLGNPKIDKQNYLALVRELKDAFEPHG-----YLLTAAVSPGKDK 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246 YINNGATRDKIVMGVPFYGRAMSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186 IDRAYDIKELNKLFDWMVWTYDYHGGWENFYGHNAPLYKRPDETDELHTYFNVNYTMHY
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                                                                                 OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24.5%; Score 738; DB 2; L
34.2%; Pred. No. 6.6e-51;
ive 85; Mismatches 150;
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                                                                                                                                                                                 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/486,839
FILING DATE: 07 - June - 1995
ATTORNEY/AGENT INFORMATION:
United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395 PELEVP-KPGQPSEPEHGPSPGQDT
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Patent No. 6057142
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: A Human Chi
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305

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367 G---
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                  US-09-039-198A-2
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Production, Its Use For Decomposing Chitin, Its Use in Therapy or Prophylaxis Against Infection Diseases.
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                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATIES: SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                               NAME: MOTISS, ROBER C.
REGISTRATION NUMBER: 42,910
REFERENCE/DOCKET NUMBER: 294-32 DIV
TELECOMONICATION INFORMATION:
TELEPANE: (516) 822-3550
TELEPANE: (516) 822-3550
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                SOFTWARE:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/151,011
FILING DATE: 10 - September - 1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                 New York
: United States of America
                                                                 ADDRESSEE: Hoffmann & Baron, I
STREET: 6900 Jericho Turnpike
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          466 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 34.2<sup>§</sup>
Matches 152; Conservative
                                                                                                                           COUNTRY: United States
ZIP: 11791
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
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TITLE OF INVENTION: Pr
TITLE OF INVENTION: Th
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
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74 -EKRGYERFINILRIKNPELTTMISLGGWYEGSEKYSDMAANFTYRQQFIQSVLDFLQEYK 132
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  306 FOKEEWHIOYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366 GHCGPKNPLLNKVHNMINGDEKNSFECILGFSTTTFTTTFTTFTTFTTFTFSFTTFTTT 425
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58;
                                                                                                                                                                                         ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
STREET: 233 South Wacker Drive/6300 Sears Tower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 738; DB 3; Length 46
Pred. No. 6.6e-51;
5; Mismatches 150; Indels
                                            GENERAL INFORMATION:
APPLICANT: Gray, Patrick W.
APPLICANT: Tjoelker, Larry W.
TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRAGMENTS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                      CITY: Chicago
STATE: 111inois
COUNTRY: United States of America
ZIP: 60606-6402
COMPUTER READABLE FORM:
WEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOGTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/039,198A
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                426 PSPITPITPSPITPTITPSPITPT 450
Sequence 2, Application US/09039198A Patent No. 6200951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIPICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: RIN-Laures, Li-Hsien
REGISTRATION NUMBER: 33,547
REFERENCE/DOCKET NUMBER: 2786;
TELECOMMUNICATION INFORMATION:
TELEFAX: (312) 474-6300
TELEFAX: (312) 474-6300
TELEFAX: (312) 474-6300
SEQUENCE CHARACTERISTICS:
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Similarity 34.2%;
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395 PELEVP-KPGQPSEPEHGPSPGQDT 418

Search completed: March 22, 2004, 07:04:01 Job time : 44.2018 secs

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| cgn2_6/ptodata/2/iaa/6A_COWB.pep:*
| cgn2_6/ptodata/2/iaa/6B_COWB.pep:*
| cgn2_6/ptodata/2/iaa/6B_COWB.pep:*
| cgn2_6/ptodata/2/iaa/RCTUS_COMB.pep:*
| cgn2_6/ptodata/2/iaa/PcTUS_COMB.pep:*
| cgn2_6/ptodata/2/iaa/PcTUS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-292-225-21
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US-09-545-814-32
US-09-151-011-4
US-09-151-011-4
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Maximum Match 100%
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08-877~599-1	-1	US-09-267-574-15	US-09-545-814-29	US-09-459-749D-17	US-08-694-915-2	US-08-694-915-4	US-08-850-348A-2	US-09-052-778-2	US-09-408-647A-2	US-09-052-778-13	US-07-939-501A-10	US-07-939-501A-12	US-07-939-501A-1	US-08-448-398-7	US-08-358-901-2	US-08-566-347-2	US-08-693-835-2
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721.5	721.5	721.5	672.5	650	630	630	630	420	419.5	417	412	412	411	411	403.5	403.5	403.5
28	29	30	31	32	33	34	35	36	3.7	38	39	40	41	42	43	44	45

ALIGNMENTS

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gequence 15, Application US/0929225

patent No. 6455686

GENERAL INFORMATION:

APPLICANT: Mccall, Catherine A.

APPLICANT: Mcall, Catherine A.

APPLICANT: Meber, Eric R.

TITLE OF INVENTION: ONSELD DEMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOWEL DEMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOWER: US/09/292.225

CURRENT APPLICATION NUMBER: 60/098,909

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,295

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER APPLICATION NUMBER: 60/098,565

EARLIER PILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE: PATENTIN UNIVER: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SEQ ID NO 15

LENGTH SSS
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100.0%; Score 3107; DB 4;
Best Local Similarity 100.0%; Pred. No. 6.5e-241;
Matches 555; Conservative 0; Mismatches 0;
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US-VOIGED-CEAL
US-Sequence 21, Application US/0929225
Fatent No. 645568
Fatent No. 645568
GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
APPLICANT: McCall, Catherine A.
CURRENT PLING DATE: 1999-04-15
EARLIER FILING DATE: 1998-04-17
EARLIER PILING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: 60/089,565
EARLIER APPLICATION NUMBER: 60/089,565
EARLIER APPLICATION NUMBER: 60/080,565
EARLIER APPLICATION NUMBER: 60/080,662
NUMBER OF SEQ ID NOS: 49
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 21
ENGRH: 536
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241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA 300
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                                           241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPA
                                                                                                              KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
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100.0%; Pred. No. 1.8e-233;
iive 0; Mismatches 0;
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Matches 536; Conservative
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US-09-292-225-21
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Sequence 18, Application US/0929225

Patent No. 6455666

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Wheer, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: AND USES THEREOF
TITLE OF INVENTION: AND USES THEREOF
TITLE OF INVENTION: AND USES THEREOF
CURRENT APPLICATION NUMBER: 60/098, 909
EARLIER FILING DATE: 1998-04-15
EARLIER PELLOR DATE: 1998-05-13
EARLIER PELLOR DATE: 1998-05-13
EARLIER PELLOR DATE: 1998-04-17
EARLIER PELLOR DATE: 1998-04-17
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  PLYKRPDETDELHTYFNVNYTWHYYLANGATRDKLVMGVPPYGRAWSIEDRSKLKLGDPA 300
                                                                                                                       301 KGMSPPGFISGEEGVLSYIELCQLPQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                                                                                                                                                                           KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP 420
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100.0%; Score 3107; DB 4; Length 555;
Best Local Similarity 100.0%; Pred. No. 6.5e-241;
Matches 555; Conservative 0; Mismatches 0; Indels 0
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ORGANISM: Dermatophagoides farinae
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Sequence 36, Application US/0929225

Patent No. 645566

GENERAL INFORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Hunter, Shirley Wu
APPLICANT: Meber, Eric R.
ITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
ITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
ITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
ITLE OF INVENTION NUMBER: US/09/292,225
CURRENT FILING DATE: 1999-04-15
EARLIER FILING DATE: 1998-09-13
EARLIER FILING DATE: 1998-04-17
EARLIER APPLICATION NUMBER: US/098,565
EARLIER APPLICATION NUMBER: US/098,565
EARLIER APPLICATION NUMBER: US/098,565
EARLIER APPLICATION NUMBER: US/062,013
EARLIER APPLICATION NUMBER: US/062,013
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                                                        KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
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241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPA 300
                                                                                     301 KGMSPPGFITGEEGVLSYIELCQLPQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC
                                                                                                                                                                                     361 KLAFLKELGVSGVMIWSLENDDFKGHCGPKYPLLNKVHNMINGDEKNSYECLLGPSTTTP
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Best Local Similarity 81.7%; Pred. No. 1.1e-195;
Matches 456; Conservative 24; Mismatches 26;
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; ORGANISM: Dermatophagoides farinae
US-09-292-225-38
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US-09-292-225-38
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Sequence 35, Application US/0929225

Patent No. 645566

GENERAL INPORMATION:
APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NOVEL DERMATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS
TITLE OF INVENTION: NUMBER: US/09/292, 225
CURRENT APPLICATION NUMBER: 60/098, 909
EARLIER APPLICATION NUMBER: 60/098, 909
EARLIER FILING DATE: 1998-09-02
EARLIER FILING DATE: 1998-06-13
EARLIER FILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE PATENTING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE PATENTING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49
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                                                                                                                                     379
                                                                                                                                                                ELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE 360
                                                                                                                                                                                                                                                                        NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTFTTFTTFTTFTTFTT 420
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                                                                241 YTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYI 300
                                                                                                                                                                                                                                        NDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTPTTTTTTTTTPTTPSPT 439
                                                                                                                                                                                                                                                                                                                                              TPTTTPSPTTPTTTPSPTTPTTTPSPTTPTPTTTPTPAPTTSTPSPTTTBHTSETPKYTTY 480
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                                                                                                                                     ELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      VDGHLIKCYKEGDIPHPTNIHKYLVCEFVNGGWWVHIMPCPPGTIWCQEKLTCIGE 555
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81.7%; Pred. No. 1.1e-195;
iive 24; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT
; ORGANISM: Dermatophagoides farinae
US-09-292-225-35
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Best Local Similarity 81.7
Matches 456; Conservative
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243 MHYYLANGATRDKLVMGVPFYGRAMSIEDRSKVKLGDPAKGMSPPGFITGEEGVLSYIEL 302
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                                                                                          CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLEND 381
                                                                                                                                                                            DFKGHCGPKNPLLNKVHNMINGDEKNSPECILGPSTTTPTTTTTTTTTTTPTTPFTTP 441
          262 MHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIEL 321
                                                                                                                                                                                                                                                              442 TITPSPITPITIPSPITPTITPSPITPTPTPTPAPITISTPSPITIEHTSETPKYTIYVD 501
                                                                                                                                                                                                                                                                                                         -----PTTTDSTSETPKYTTYID 433
                                                                                                                                                                                                                                                                                                                                                                       434 GHLIKCYKQGYLPHPIDVHKYLVCEYIATPNGGWWVHIMDCPKGTRWHATLKNCIQE 490
                                                                                                                      CQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMIWSLEND
                                                                                                                                                                                                                                                                                                                                                GHLIKCYKEGDIPHPINIHKYLVCEFV---NGGWWVHIMPCPPGTIWCQEKLTCIGE 555
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: COTOL, ADDITED APPLICANT: COTOLS, LOLITED APPLICANT: Gopalakrishnan, Bhuvana APPLICANT: Gopalakrishnan, Bhuvana TITLE OF INVENTION: RECOMBINANT CHITINASE AND USE THEREOF ITLES OF INVENTION: A BIOCIDE NUMBER OF SEQUENCES: 2 CORRESPONDENCE ADDRESS: ADDRESSE: Hovey, Williams, Timmons & Collins STREET: 2405 Grand Blvd., Suite 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/524,051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: COLLINE, JOHN M.
REGISTRATION NUMBER: 2287;
TELECOMMUNICATION INFORMATION:
TELEPHONE: (816)474-9050
TELEPHONE: (816)474-9050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08524051
Patent No. 5866788
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TELEX: 434-363
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 554 amino acids
""PE: amino acid
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APPLICANT: Muthukrishnan, S
APPLICANT: Choi, Hee Kyung
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MEDIUM TYPE: Floppy disk
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Sequence 41, Application US/0929225

Patent No. 645566

GENERAL INFORMATION:

APPLICANT: Mcdall, Catherine A.

APPLICANT: Hunter, Shirley Wu

APPLICANT: Weber, Eric R.

TITLE OF INVENTION: NOVEL DERNATOPHAGOIDES NUCLEIC ACID MOLECULES, PROTEINS

TITLE OF INVENTION: NOVEL DERNATOPHAGOIDES NUCLEIC ACID MOLECULES,

FILE REFERENCE: AL-2-C3

CURRENT APPLICATION NUMBER: US/09/292,225

CURRENT APPLICATION NUMBER: US/099,209

EARLIER APPLICATION NUMBER: 60/098,909

EARLIER FILING DATE: 1998-09-13

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

EARLIER FILING DATE: 1998-04-17

NUMBER OF SEQ ID NOS: 49

SOFTWARE PALENTIN Ver. 2.0
241 PLYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSKVKLGDPA 300
                                                                  KGMSPPGFISGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
                                                                                              301 KGMSPPGFITGEEGVLSYIELCQLFQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISC 360
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                                                                                                                                                                                                                                                                                                                  481 TPSPTTTEHTSETPKYTTYVDGHLIKCYKEGDIPHPTNIHKYLVCEFV---NGGWWVHIM
                                                                                                                                                  KLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNSFECILGPSTTTP
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                                                                                                                                                                                                                                                                           421 TPTTPSTTSTTPT-------
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US-09-292-225-41
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                    WVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFKGHCGPKNPLLNKVHNMINGDEKNS 408
                                                                                                                                                                                                                                                                                                                               ----SYTVPPPHTENTTPTPEWARPPSTPSDPSEGDPIPTTTAKPASTTKTTVKTT 449
                                                                                                                                                                                                                                                                                                                                                                 TTPTTTPSPTT-----PTP-TTPTPAPTTSTPSPTTTEHTSETPKYTTYVDGHLI 505
                                                                                                                                                                                                                                                                                                                                                                                                  TITIAKPPOSVIDBENDINVRPEPKPEPQPEPEVEVP-PIENE------VDGSEI 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Becher, Anna M.
APPLICANT: Becher, Anna M.
TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND
TITLE OF INVENTION: USES THEREOF
FILE REFERENCE: FC-5-C1
CURRENT APPLICATION NUMBER: US/09/545,814
CURRENT PILING DATE: 2000-04-07
PRIOR APPLICANION NUMBER: 66/128,833
PRIOR FILING DATE: 1999-04-09
                                                                                                                                            291 RSKLKLGDPAKGMSPPGFISGEEGVLSYIELCOLFOKEE--WHIOYDEYYNAPYGYNDKI
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                                                                                                                                                                                                                                         343 WVGYEDPRSVEIKYMYNIKQKGYLGAMTWAIDMDDFQGLCGEKNPLIKILKHKS-----
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 KDAF--BPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
                                                                     LYKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIED-----
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; ORGANISM: Ctenocephalides felis
US-09-545-814-2
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SOFTWARE: Patentin Ve
SEQ ID NO 2
LENGTH: 583
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                                                                                                                                            184 KDAF--EPHGYLLTAAVSPGKDKIDRAYDIKELNKLFDWMNVMTYDYHGGWENFYGHNAP
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Patent No. 6060590
GENERAL INFORMATION:
APPLICANT: BYJANL, PETER J.
APPLICANT: KAWAMUTA, KAZUO
TITLE OF INVENTION: CHITINASE RELATED PROTEINS AND METHODS
TITLE OF INVENTION: OF USE
FILE REPRENCE: 07306/01501
CURRENT PILING DATE: 1998-03-31
CURRENT PILING DATE: 1998-03-31
NUMBER OF SEQ ID NOS: 16
SEQ ID NO 16
SEQ ID NO 16
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US-09-052-778-16
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                                              KEAGGGEPGPYTNATGFISYYEICLEVDDPSKGWTKKWDEHGKVPYAYKGNOWVGYEDPK 355
                                                                      SISCKLAFLKELGVSGVMVWSLENDDFKGHCG-PKNPLLNKVHNMINGDEKNSFECILGP 415
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237 YRRPHD-QYAYEKLNVNDGLQLWVDMGCPANKLVVGVPFYGRSFTLSNSNKDYRLGTYIN 295
                       PAKGMSPPGFISGEEGVLSYIELCQLFQ--KEEWHIQYDEYYNAPYGYNDKIWVGYDDLA 356
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APPLICANT: Becher, Anna M.
TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE REFERENCE: FC-5-C1
CURRENT APPLICATION NUMBER: US/09/545,814
CURRENT FILING DATE: 2000-04-07
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Pred. No. 3.6e-57;
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PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 40
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US-09-545-814-5
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Similarity 34.6%;
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SEQ ID NO 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243 YKRPDETDELHTYFNVNYTMHYYLNNGATRDKLVMGVPFYGRAWSIEDRSK-LKLG---D 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAKGMSPPGFISGEEGVLSYIELCOLFO - KEEWHIQYDEYYNAPYGYNDKIWYGYDDLA 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STTTPTP--TTTPTTTPTTTPSPTTPTT-TPSPT-TPTTTPSPTTTPSPTTTPSPTTPSTTF 471
356 SVALKMEFIKSKGYGGAMTWAIDMDDFQGVCSDDKHTLAVIMHDYM----KNYIVPEFDS 411
                                                                                                                                                                      TPTPAPTTSTPSPTTTE----HTSETP-----KYTTYVDGHLIKCYKEGDIPHPT 517
                                                                                                                     SRITPRPEMAKPPSTPSQEP-DDTPYIPTHAPKPSRKPTRKPKPT--TTTVAATTPVAT 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Becher, Anna M.

TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: VER THEREOF FITLE REFERENCE: FC-5-CL
CURRENT APPLICATION NUMBER: US/09/545,814
CURRENT APPLICATION NUMBER: 60/128,833
PRIOR FILING DATE: 1990-04-09
NUMBER OF SEQ ID NOS: 109
SOFTWARE: Patentin Ver. 2.1
STORT OF SEQ ID NOS: 2.1
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                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Score 812.5; DB 4;
; Pred. No. 7e-57;
93; Mismatches 206;
                                                                                                                                                                                                                                                                                                   518 NIHKYLVCEFVNGGWWVH----IMPCPPGTIW 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Tagged Ctenocephalides felis
US-09-545-814-32
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 32, Application US/09545814
Patent No. 6416977
GENERAL INFORMATION:
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34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 34.64
Matches 198; Conservative
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us-09-662-293-18.rai

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US-08-486-839-4
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                                                                                              APPLICANT
                                                                                                                                                                                           STREET:
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---KYTTYVDGHLIKCYKEGDIPHPT 517
                 EKRGYERFINNLRLKNPELTTMISLGGWYEGSEKYSDMAANPTYRQQFIQSVLDFLQEYKF 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180 HVPELCELLDAIHVMSYDLRGNWAGFADTHSPLYRRPHD-QYAYEKLNVNDGLQLWVDMG 238
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q--KEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDF 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIT-TPSPT-TPTTPSPTTTTPSPTTPTTPTPTPTPAPTTSTPSPTTTE-----HTSET 493
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TITLE OF INVENTION: FLEA CHITINASE NUCLEIC ACID MOLECULES, PROTEINS AND TITLE OF INVENTION: USES THEREOF FILE CORNATION: USES THEREOF CURRENT APPLICATION NUMBER: US/09/545,814

CURRENT APPLICATION NUMBER: US/09/545,814

PRIOR FILING DATE: 2000-04-07

PRIOR FILING DATE: 1999-04-09

NUMBER OF SEQ ID NOS: 40

SEQ ID NO 14

SEQ ID NO 14

LENGTH: 559
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                             71;
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 26.1%; Score 811.5; DB 4; Length 559; Best Local Similarity 35.8%; Pred. No. 7.1e-57; Matches 195; Conservative 86; Mismatches 193; Indels 71
                                                     NIHKYLVCEFVNGGWWVH----IMPCPPGTIW 545
                                                                      TPTPAPTTSTPSPTTTE----HTSETP
                                                                                                                       RESULT 12
US-09-545-814-14
Sequence 14, Application US/09545814
Patent No. 6416977
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT ORGANISM: Ctenocephalides felis
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                                                                                             TITLE OF INVENTION: A human chitinabe, its recombinant TITLE OF INVENTION: production, its use for decomposing chitin, its use TITLE OF INVENTION: in therapy or prophylaxis against infection diseases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      265 YLNNGATRDKLVMGVPFYGRAWSIEDRSKLKLGDPAKGMSPPGFISGEEGVLSYIELCQL 324
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23.8%; Score 738; DB 2; Length 46
34.2%; Pred. No. 4.3e-51;
.ive 85; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.30 SOFTWARE:
                                                                                                                                                                                                                                                                                                           COUNTRY: United States of America ZIP: 11758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/486,839
FILING DATE: 07 - June - 1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Baron, Ronald J
REGISTRATION UNMERS: 29,281
REFERENCE/DOCKET NUMBER: 294-26
TELECOMMUNICATION INFORMATION:
Sequence 4, Application US/08486839
Patent No. 5928928
GENERAL INFORMATION:
                                                                                                                                                                                                                   3: Hoffmann & Baron
350 Jericho Turnpike
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (516) 822-3550
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Matches 152; Conservative
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                                                                                                                                                                    NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                  CITY: Jericho
STATE: New York
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TOPOLOGY: unk
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                                                                                                                                                                                                                     ADDRESSEE:
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----RYPLIQTLRQELSLPYLPSGT 394
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                                                              325 FQKEEWHIQYDEYYNAPYGYNDKIWVGYDDLASISCKLAFLKELGVSGVMVWSLENDDFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34 RIVCYVGTWSVYHKVDP-YTIEDIDPFKCTHLMYGFAKIDEYKYTIQVFDPYQDDNHNSW
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Refeat No. 6200951

GENERAL INFORMATION:
APPLICANT: Gray, Patrick W.
TITLE OF INVENTION: CHITINASE CHITIN-BINDING FRACMENTS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun STREET: 233 South Wacker Drive/6300 Sears Tower
CORTY: Chicago.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: Marshall, O'Toole, Gerstein, Murray & Borun
233 South Wacker Drive/6300 Sears Tower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Felease #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/039,198A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85; Mismatches 150;
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                                                                                                                                                                                     ----FECNOG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: Illinois
COUNTRY: United States of America
ZIP: 6006-6402
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                             PSPITPITIPSPITPITIPSPITPI 469
                                                                                                                                                                                                                                                                     PELEVP-KPGQPSEPEHGPSPGQDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: RIn-Laures, Li-Hsien
REGISTRATION NUMBER: 33,547
REFERENCE/DOCKET NUMBER: 2786(
TELECOMMUNICATION INFORMATION:
TELEFAK: (312) 474-6300
TELEFAK: (312) 474-6300
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : 466 amino acids
amino acid
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Production, Its Use For Decomposing Chitin, Its Use in
Therapy or Prophylaxis Against Infection Diseases.
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MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
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APPLICATION NUMBER: US/09/151,011
FILING DATE: 10 - September - 1998
ATTORNEY, AGENT INFORMATION:
NAME: MOTFIES, RODERT C.
REGISTRATION NUMBER: 294-32 DIV
TELECOMMUNICATION INFORMATION:
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                                                                                 445 PSPITPITPSPITPTPSPITPT 469
                                                                                                                       395 PELEVP-KPGQPSEPEHGPSPGQDT 418
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STATE: New York
COUNTXY: United States of America
ZIP: 11791
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Patent No. 6057142
GENERAL INFORMATION:
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STREET: 6900 Jericho Turnpike
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TELEFAX: (516) 822-3582
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
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TITLE OF INVENTION: A HU
TITLE OF INVENTION: Prof
TITLE OF INVENTION: Thex
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
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unknown
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Search completed: March 22, 2004, 07:04:00 Job time : 46.7332 secs